

WESTERN INSTITUTE OF NURSING

The Western Institute of Nursing (WIN) is the western regional nursing organization that succeeded the Western Council on Higher Education for Nursing (WCHEN). In 1985, following extensive deliberations by special committees, the decision to create an autonomous, self-supporting organization was implemented. At the first meeting of the new organization, nurses from collegiate schools of nursing and health care agencies adopted the bylaws and the new name of the organization, Western Institute of Nursing. The organization moved to Portland, Oregon on July 1, 1996. The Western Institute of Nursing was incorporated on November 3, 1998 in accordance with the Oregon Nonprofit Corporation Act.

WIN exists to bring together a diverse community of nurses in a shared commitment to transcend the boundaries of knowledge development and application to advance the discipline and drive improvements in practice, outcomes, and cost. The organizational structure includes the Membership Assembly, the Board of Governors, committees, and societies.

There are six categories of membership in WIN: agency, individual, student, retired nurse, associate, and honorary. Agency memberships are open to organized nursing education programs and organized nursing practices in one of the states designated by the Board of Governors as being in the western region. Individual membership is open to RNs who support the mission of WIN. Student members must be matriculated in a degree granting program. Retired nurse membership is open to retired nurses who live in, or relocate to, the region following retirement. Associate memberships are open to individual non-nurses who, and to organizations, agencies, and businesses outside the western region which, support the mission of WIN. Honorary memberships include those designated for Emeritus status and those who have made supporting contributions to WIN.

COMMUNICATING NURSING RESEARCH

Volume 52

CAREER, CONNECTION, COMMUNITY

An annual publication of the Western Institute of Nursing containing the proceedings of the Communicating Nursing Research Conference and WIN Assembly held April 10-13, 2019 at the Town and Country Hotel and Convention Center in San Diego, California.

**WESTERN INSTITUTE OF NURSING
SN-4S
3455 SW US VETERANS HOSPITAL ROAD
PORTLAND, OR 97239-2941**

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Spring 2019

COMMUNICATING NURSING RESEARCH

issues previously published:

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- Volume 3: Methodological Issues in Research
- Volume 4: Is the Gap Being Bridged?
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- Volume 49: Innovations in Engagement through Research, Practice, and Education
- Volume 50: 50 Years of Leadership: Continuing the Vision
- Volume 51: Transforming Health through Advances in Nursing Research, Practice, and Education

The Cumulative Index of the Communicating Nursing Research Conference Proceedings, Volumes 1 to 25, (1968-1992) was published in 1992.

COMMUNICATING NURSING RESEARCH has been published annually by the Western Institute of Nursing. Each volume contains the addresses and abstracts of papers presented at the annual Communicating Nursing Research Conference.

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PREFACE

The 52nd Annual Communicating Nursing Research Conference, “Career, Connection, Community,” was held April 10-13, 2019 at the Town and Country Hotel and Convention Center in San Diego, California.

The keynote address was delivered by **Victor J. Strecher**, PhD, MPH, Professor and Director for Innovation and Social Entrepreneurship, University of Michigan School of Public Health and Founder and CEO of JOOL Health, Ann Arbor, MI. State of the Science presentations were delivered by: **Deborah Eldredge**, PhD, RN, Director, Nursing Quality, Research, and Magnet Recognition, Oregon Health & Science University, Portland, OR; **Catherine Gilliss**, PhD, RN, FAAN, Dean and Professor, School of Nursing, University of California, San Francisco, CA; and **Katherine Sward**, PhD, RN, Associate Professor, College of Nursing, University of Utah, Salt Lake City, UT.

Two award papers were presented:

Distinguished Research Lectureship Award: Paula Meek, PhD, RN, FAAN, Professor and Senior Faculty Scholar, College of Nursing, University of Colorado Anschutz Medical Campus, Aurora, CO and

Carol A. Lindeman Award for a New Researcher: Krista L. Scorsone, MS, RN, PMHNP-BC, PhD Candidate, College of Nursing, University of New Mexico, Albuquerque, NM.

The Proceedings include the abstracts of symposium, podium, and poster presentations. One hundred and forty-three papers were presented in podium sessions on a wide variety of topics, including completed research, theoretical papers, and projects. Thirty-four papers were presented in eight symposia, and one hundred and nine papers were organized in twenty-four other sessions. Four hundred and four posters were displayed over four poster sessions, representing projects and research, completed or in progress. A total of one hundred and eighty-six posters were submitted from member institutions for the Research & Information Exchange.

Awards were given to numerous WIN individual members during the 2019 conference. Please consult the Table of Contents for the location of the aforementioned papers, the list of awardees honored by WIN, and the name and subject indexes.

The conference was planned and organized by the WIN Program Committee, and we extend our gratitude to the Program Committee members: Katreena Collette Merrill, Chair, UT; Judith Berg, AZ; Mary Ellen Dellefield, CA; Linda Edelman, UT; Bronwyn Fields, CA; Lori Hendrickx, SD; Kathryn Lee, CA; Judy Liesveld, NM; Kristin Lutz, OR; Anthony McGuire, ME; Paula Meek, CO; Annette Nasr, CA; Joanne Noone, OR; Jennifer Peterson, CA; Kristine Qureshi, HI; and Hilaire Thompson, WA.

We thank all of the nurse researchers who submitted papers and participated in the 2019 conference.

Donna Velasquez, PhD, RN, FNP-BC, FAANP
President, Western Institute of Nursing

Katreena Collette Merrill, PhD, RN
Chair, Program Committee, Western Institute of Nursing

State of the Science Paper

**MAKING THE CONNECTION: INTEGRATED
SENSOR SYSTEMS RESEARCH**

*Katherine A. Sward, PhD, RN, FAAN
Associate Professor
College of Nursing
University of Utah
Salt Lake City, UT*

MAKING THE CONNECTION: INTEGRATED SENSOR SYSTEMS RESEARCH

*Katherine A. Sward, PhD, RN, FAAN
Associate Professor
College of Nursing
University of Utah
Salt Lake City, UT*

Nursing science corresponds with precision health principles and team science approaches, to understand individual and family experience and develop personalized interventions. Research that tailors interventions based on genes, environment, social determinants, and other factors increasingly integrates internet of things devices and sensors, mobile apps, and related technologies to provide rich information about day to day environment and behaviors. Connecting this high resolution data with clinical, self-report, and other data sources requires informatics methods and advanced data science analytics. This article reviews the role of sensors in nursing and translational precision health research, and examines lessons learned from a small scale exemplar that used environmental sensors in pediatric asthma research.

Nursing research in the era of translational science and precision health

Nursing promotes and optimizes health, alleviates suffering by treating human responses, and advocates for individuals, families, communities and populations. Current initiatives in translational science and precision health mesh with nursing research agendas. Nursing science crosses disease and research disciplines, with the goal of understanding the experience of individuals and families and to develop personalized approaches across populations and settings (NINR, 2018). The National Institutes of Health (NIH) National Center for Advancing Translational Sciences (NCATS) defines translation as the process of *carrying across*—making connections and integrating knowledge and approaches from one discipline or field to another, or from one part of the research ecosystem to another (Austin, 2018). The goal of translational science is to get research findings, including new knowledge and interventions, to people more quickly. Nursing science and translational science span the spectrum from biologic underpinnings of health and illness, to interventions, to public and global health. Translational science explicitly includes both scientific and operational principles at each phase of the research process.

While the precise percentage of contribution is unknown, there is widespread agreement that traditional health care, i.e., in hospitals, outpatient clinics, and similar organizations, is only a small fraction of what actually contributes to health. Genetics play an important role, of course. But the greatest drivers of health are likely to be our environment and social determinants (the context in which we live), and our lifestyle and behaviors (the way we live our lives). The World Health Organization, for example, estimates that about a quarter of global health burden is directly attributed to the physical environment (Remoundou & Koundouri, 2009). We know also that these factors interact, that gene expression for example, is influenced by both environmental factors and interventions (Hernandez & Blazer, 2006). Traditional health research and early translational research tended to focus on discrete phases (basic science, clinical research, etc.), whereas current research approaches have become more integrated and focused on interaction, with topics such as the interplay between genetics, environment, and drugs. A study, for example, might be predominantly focused on comparative effectiveness evaluation, but include environmental, microbiome, and social determinants data to

elucidate mechanistic aspects of why each intervention might work better for one group or another. Similarly, nursing science looks holistically at people in the context of their communities, drawing on and creating knowledge, and considering day to day life and social context when offering interventions.

Translational science is not without its challenges (Austin, 2018). Among those are insufficient organizational and ‘professional culture’ support for team science; and lack of training in how to conduct translational science projects. We need to balance the competing demands for, on the one hand, high levels of rigor and reproducibility; with the need for flexible trial implementation, innovation, and agile approaches. There is still inadequate interoperability of health-related data, and a need for better tools and technologies to predict outcomes and to measure outcomes or endpoints.

The role of (biomedical/nursing) informatics

Translational science challenges are problems that informatics scientists are well positioned to help address. Biomedical informatics (BMI), the broader field that includes nursing informatics, is a transdisciplinary science that is synergistic with, but distinct from, areas such as operations IT, research IT, and computer science. For informatics, the technology is a tool but not the primary focus (people are the primary focus). Key concepts in informatics include data, information and knowledge; problem solving and decision making; human-computer interactions; with a goal of improving health (Bernstam et al., 2009) and building on multiple health professions domain expertise.

The NIH Clinical and Translational Science program was created to help promote translational science (Zerhouni, 2005), and the CTSA programs quickly acknowledged informatics as critical to the success of translational research. Research has become increasingly data rich and computationally dependent, with information infrastructure as a primary concern affecting study outcomes and not just a support service. Many biomedical informatics experts are also biomedical data scientists, “...dedicated to promote health and alleviate the burden of disease through clever transformation of data into knowledge” (Ohno-Machado, 2013).

One example of the role of informatics in precision health is the focus area currently termed as *bioinformatics* – informatics practice related to genomics and related areas such as epigenetics. Clinical informatics and clinical research informatics are also important areas of informatics practice for precision health. Many clinicians are familiar with informatics activities around research uses of electronic health records (EHRs), such as for cohort discovery, screening, and site identification. Mobile apps, videos, and similar approaches are opening up new possibilities for eConsent, supporting recruitment and enrollment through improved access and ease of use, standardized information presentation, coupled with retained ability for individuals to ask questions and make informed decisions about participation. In addition to enrollment and recruitment roles, electronic health records are increasingly used as a direct source of research data; and decision support tools that integrate with electronic records may support navigation of research protocols (Richesson et al., 2018). Research tools such as REDcap (Harris et al., 2009) have evolved from standalone systems to having functions that can pull data directly from certain EHRs (Campion, Sholle, & Davila, 2017).

Precision health

The precision medicine initiative (now termed as precision *health*, which acknowledges the importance of prevention, risk management, and wellness efforts) was launched in 2015. As opposed to the historic research approach, which is primarily designed for the average person (that is, results are assumed to generalize to anyone who

is similar to the sample), a precision approach accounts for individual differences in genes, environment, lifestyle and other factors. The goal of precision health is evidence-based *targeted* interventions, getting the right care to the right person (White House, 2015). Initial discoveries in genomics under this initiative were exciting but didn't take into account environmental and lifestyle factors that influence gene expression, in addition to the direct impacts of environmental and lifestyle factors. We need to add to traditional research and clinical data, the data about social and behavioral determinants and patient preferences, as well as genetic and environmental data, and look at these as an integrated and interacting system (Glasgow, Kwan & Matlock, 2018).

Arising concurrently with genomic discoveries, advances in statistical methods for risk stratification and predictive analytics, including artificial intelligence and machine learning as well as visualization and pattern approaches, are beginning to allow better means of preventing disease and promoting wellness. Realizing the vision of precision health requires attention to all levels of the translational science spectrum.

In summary, we find that clinical and translational research (including nursing science), in this era of precision health, are making new discoveries and moving discoveries to real-world application. These efforts require integrated, multidisciplinary teams. We know that we need contextual information such as social determinants, environment, and lifestyle/behavior, to understand the rich and nuanced factors that drive health.

Patient-generated health data

In addition to efforts to precisely target interventions, a second major aspect of the precision health initiative is promoting consumers/patients as active and engaged participants in the research process (White House, 2015). A major program within the precision health initiative is the *All of Us* initiative, based on a vision of 1 million volunteers contributing their health data over many years (NIH, 2019).

We need patients to actively engage as part of our research process, to achieve precision health goals. Data collected during intermittent clinical or research visits do not reveal what's happening in people's day to day lives. Consequently, there has been an upsurge of interest in patient-reported data (also called patient-generated or person-generated data, consumer-generated data, patient reported outcomes, self-report, "quantified self", and other labels). Traditionally data from individuals and families has been gathered by (often retrospective) survey. The data generated by these means have been viewed by some as unreliable, subject to recall bias, social desirability responding (van de Mortel, 2008) and other problems. Self-report data may also be seen as infeasible to collect, especially from large sample sizes. Technology based tools such as web-based survey software help with the feasibility question, and design approaches like ecological momentary assessment (EMA) helped to reduce participant burden while reducing recall bias. However, these advances leave researchers still lacking in important context – environmental factors and social determinants (Glasgow et al, 2018).

The rise of digital biomarkers

As healthcare transforms, we must leverage technology to generate, collect, track and manage novel data; and to turn those data into meaningful information and actionable insights. The convergence of readily available lower cost sensing and smart home devices, with mobile health approaches, increasing uptake of big data analytics and machine learning/AI evaluation, has led to a new form of data for clinical research which has been termed *digital biomarkers* (Foxworth, 2018; Wang, Azad, & Rajan, 2019). Digital biomarkers refer to consumer-generated data collected by devices (sensors) that are connected to the Internet and each other, including but not limited to wearable

and implantable technologies. The Internet of Things (or IoT) enables the networked interconnection of everyday objects, an infrastructure that is becoming increasingly popular in many aspects of our lives (Zubiaga, Procter, & Maple, 2018). Digital biomarkers serve as physiological and behavioral measures – quantifiable indicators of the person’s state at a given point in time (and often, in space as well, with geographic location as part of the data feed). Recognizing the potential of this, for example, the *All of Us* initiative announced in January 2019 the addition of activity tracker data to their data collection.

Just as traditional biomarkers are objectively measured indicators of health or biological processes, digital biomarkers allow us to objectively measure day to day indicators in the real world. There is 24/7 data capture, often with little to no patient effort; and usually real-time communications of the data. Information from digital biomarkers like continuous glucose monitors or activity trackers can help with assessing safety or efficacy endpoints. Many consumer devices are accompanied by mobile apps or web-based platforms where people can view their own data. The sensors provide rich (sometimes massive) data sets that allow for predictive analytics, such as models that incorporate trends in activity, sleep, and day-to-day habits. Combined with judiciously chosen surveys we can gain new insights. A software platform for digital biomarker studies needs to support high-rate data acquisition, and include the ability to share both raw and aggregated sensor data with researchers, often including sense-analyze-act functionality in real-time (Houssain et al., 2017)

The use of sensor devices and accompanying mobile apps offers many interesting benefits. There is potential for improved recruitment and retention of participants for research studies, because the devices are low burden and less disruptive, and because there is high intrinsic value for patients in being able to view their own data. There may be reduced overhead due to the automatic data capture (although this may be mitigated in part by increasing technological overhead). There are also challenges associated with such devices. The market is expanding rapidly and devices iterate (“upgrade”) frequently. The validity of many such devices is unknown, although there is a general perception that lower cost devices come with reduced precision. There is no standard data model or communications protocol, so connecting data from different devices can be difficult.

Summary

Informatics and data science are integral aspects of precision health and translational science (Tenenbaum et al., 2016). Among the areas of informatics research that directly overlap with these initiatives are ideas around machine readable research consent documents, integration of data from multiple sources and of different types (e.g. “omics”, clinical, environmental). Data and communications standards are needed for sensor devices, and we need thoughtful approaches to ensuring data privacy, security and integrity. Analytics for high-dimensional data are needed that can model events and states across multiple scales, through space and time. We need to develop methods to assess data quality in these massive data sets, and to quantify and account for uncertainty in measurement. And we need flexible, scalable, and extensible knowledge resources and decision support tools to help people utilize these new data effectively.

Real-time data collected from sensors, with high spatio-temporal resolution, are rapidly becoming a very real source of research data. We need to remain cognizant though – *more data* is not the same thing as *more information*. Random *more data* is simply noise. We need the right data, processed and presented in such a way that we can make sense of it.

Lessons from the field

Pediatric Research using Integrated Sensor Monitoring Systems (PRISMS) was a

four-year program launched by the NIH National Institute for Biomedical Imaging and Bioengineering (NIBIB) in 2015 to develop a research infrastructure that would support epidemiologic studies that included sensor data, with pediatric asthma as the initial use case (Sward et al., 2016). The Utah PRISMS informatics center approached the informatics platform as a federated system (Gouripeddi et al., 2013) meaning that data can be flexibly connected and integrated when and how needed for any given analysis. The overarching goal for the Utah PRISMS informatics center was to develop efficient ways to link information from different sensors together, and how to link sensor data with other kinds of information, such as clinical records or research outcomes. The team employed a high engagement, user centered design approach to agile software development. Research participants were actively engaged early in the process—putting sensors into homes that were part of an ongoing pediatric asthma research study, and working with those asthma families to simultaneously use and iteratively refine the research platform. This home sensor deployment served as a pilot project, conducted after approval by the University of Utah IRB. The sensor deployment pilot project was conducted as an ancillary to an ongoing pediatric asthma clinical/epidemiology study in order to provide a realistic exemplar, given that the purpose of the national PRISMS program was to develop infrastructure to support future epidemiologic studies.

Here we present some of the lessons learned from that small scale (10 participants, 8 homes) but long term (up to 18 months) sensor deployment pilot:

1. It takes a team
2. Informative participants have unique characteristics
3. You need non-traditional study staff roles
4. Equipment will fail
5. Careful tracking of sensor deployments is critical
6. Legal and regulatory agreements take time
7. Don't overlook data quality assessments
8. Sensor studies very quickly become big data and need novel analytic approaches
9. Humans are natural scientists
10. Families want to be engaged as part of research

Lesson 1. It takes a team. No one person has all the expertise needed for a project of this complexity. The team members for this project brought expertise from domain areas (nursing, medicine, pharmacy, environmental science) and diverse disciplines (electrical and computer engineering, chemical engineering, scientific computing and imaging, computer science, atmospheric science, bioengineering, human-computer interactions, statistics). This was team science in its best form – a true collaboration of experts. The team came together organically, driven by two questions: (1) What does the science require?, and (2) Who is the best person we know, to address this aspect? Keeping the diverse team of proven talent engaged and to overcome traditional discipline boundaries, required a thoughtful effort to make the sub-projects scientifically meaningful to all team members, and to focus on conversations on the common scientific goals.

Lesson 2. Characteristics of an informative development cohort. Engaged participants must represent the population of interest, in this case, asthma families. We needed people who were able to participate as research partners – that were tolerant of the developmental nature of the platform and frequent changes, good informants and able to help debug problems, willing to participate in design sessions and frequent interactions with the study team.

Lesson 3. This type of study requires non-traditional study staff roles. In the Salt Lake Valley corridor are only 5 EPA sensors, and because of the geology the area is known to have numerous pockets of “micro-climates” in which weather, pollen counts, and other factors can vary greatly. Thus it was important for us to have participants be somewhat geographically dispersed, but still accessible for the frequent home visits needed to deploy and troubleshoot systems. Participant families were spread across approximately 80 miles from the northernmost to the southernmost home. We needed a traditional research coordinator (RC), to assist with research tasks (recruitment and consent, clinical data collection, etc.). Secondly, we needed a deployment RC, who could physically go to homes, install the sensors and connect to the home wi-fi, and conduct an assessment of the home “built environment”. We looked for a combination of public health and industrial hygiene knowledge, coupled with strong technical skills and the ability to communicate with families to determine where and how to deploy the sensors. Finally we needed study staff for ongoing infrastructure management, who could troubleshoot the sensors and software after deployment. This role required strong data management and programming skills, along with logical thinking and problems solving. Of note, while we, for pragmatic purposes, used different staff for each of these roles, these are distinct skills that could be embodied by the same person.

Lesson 4. Equipment will fail. Some of the homes had sensors in place for more than a year. The sensors would periodically get clogged with dust (or insects, or water...). The Utah PRISMS home deployment processes included multiple escalating levels of troubleshooting, including remote access to the system, and interacting with families for simple measures (such as asking the family to unplug and re-plug in the devices). Even highly engaged families prefer to minimize the number of times study staff come to the home and disrupt their life, so when a sensor failed and the problem couldn't be resolved by remote troubleshooting, a functional sensor was brought to the home and traded out for the failed sensor, which was then repaired and placed back into the queue.

Lesson 5. Careful deployment tracking (what sensor is where) is critical. Sensors were moved from home to home over time, as they failed, were repaired, and put back into use (each sensor was in an average of 5 homes). We developed a series of REDCap forms for sensor deployment tracking. However, even with careful tracking, participants would sometimes move sensors around within their homes.

Lesson 6. Legal and regulatory agreements take time. Data transfer agreements and business associate agreements are likely to be required by IRBs before data can be shared in a multi-institutional network, or even before data can be sent to a data coordinating center. These regulatory steps can take longer than anticipated, and require active efforts from all parties.

Lesson 7. Don't overlook data quality assessments. Missing values could be truly missing, or could be faults in the data transmissions and potentially recoverable from on-device memory cards or other backup storage. Such backups often have a limited amount of available memory, though, so such recovery is only possible within a limited window (and not available on all sensor devices). Values that appear unusual could be spurious – but could also be real and simply reflections of the extent to which day to day measurements can vary. Because time is such an integral part of high-frequency data streams, it is crucial to understand how time is represented in a data feed (for example, in local time or a standardized measure like UTC time). The corollary: even well-validated survey instruments can return unexpected data.

Lesson 8. Sensor studies very quickly become very big data, with tens of millions of sensor readings even from pilot projects with a small number of homes. We needed to re-design our data storage architecture. Our research infrastructure predominantly

used a traditional “single patient” centric data architecture. Adding things like ambient sensors, which remain stationary in a room while different people move in and out of a space, led us to thinking in terms of more abstract data capture events as the core model. Processing sensor data can be computationally intensive and require high-performance or distributed computing infrastructure. The optimal way to look at high-dimensional data with high spatio-temporal resolution is largely unknown. Novel computational and analytic techniques will likely be needed to understand the data. Becoming familiar with the data may involve approaches such as examining diurnal and seasonal patterns.

Lesson 9. Humans are natural scientists. Our project demonstrated a nearly universal tendency to self-experiment, if given the opportunity to visualize the data coming from sensors. This desire to self-observe, combined with feelings of contributing to knowledge development, is at the root of *citizen science* initiatives. Citizen science is a research collaboration involving members of the community in research projects to examine real-world problems (Wiggins & Crowston, 2011); a highly engaged form of participatory design. A common concern among researchers is that people may alter their behavior when they know they are monitored (a form of the Hawthorne effect). In the PRISMS pilot study, this self-experimentation phase only lasted 2-3 weeks, at which time families reported that the system was largely relegated to the background of their awareness unless the research team actively prompted engagement with the sensor system (Moore et al., 2018).

Lesson 10. Families want to be engaged in this sort of research. Although a small sample, the surprisingly high willingness of families to participate in this research was also seen in parallel environmental sensor pilot studies, in other cohorts (Collingwood et al., 2018). The families sometimes had questions about the devices but were predominantly quite willing to let sensors be placed into their homes and in multiple pilot projects, almost all allowed us to connect the sensors to their home wi-fi. Families expressed few concerns about remote troubleshooting, after they understood what the access allowed and didn't allow.

Conclusions

Precision medicine and clinical/translational science are complex and data-intensive endeavors. Ubiquitous computing and the emergence of low cost sensors, combined with emerging informatics and data science techniques, are both causing, and helping researchers to cope with, a tsunami of new information sources for precision health, allowing rich understanding of the day to day influences on health.

Precision health and clinical/translational science are team science endeavors. It is critical for scientists in health disciplines, like nursing, to be engaged in and leading this process. Clinicians bring important domain expertise, and already have the skills needed for successful team-based research.

Families want to be engaged as partners in research involving sensors. The precision health vision is interprofessional teams with diverse expertise and high patient/family engagement, teams which are integrating genetic, environmental, behavioral, person-generated, and clinical information to advance precision health and healthcare transformation. Although still in evolution, this vision is within reach.

Conflicts of Interest: The author declares that she has no competing interests.

Funding: Research reported in this publication was supported by the National Institute of Biomedical Imaging and Bioengineering of the National Institutes of Health under Award Number **U54EB021973**. The content is solely the responsibility of the author and does not necessarily represent the official views of the National Institutes of Health.

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Distinguished Research Lectureship Award Paper

**SYMPTOMS, SHAPE SHIFTERS, TWO MINDS
AND OTHER FABLES**

*Paula M. Meek, PhD, RN
Professor, Senior Scholar, and PhD Program Director
College of Nursing
University of Colorado, Anschutz Medical Campus
Aurora, CO*

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*Paula M. Meek, PhD, RN
Professor, Senior Scholar, and PhD Program Director
College of Nursing
University of Colorado, Anschutz Medical Campus
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Fables are by their very nature a composite of perception and truth woven into a fabric that allows us to hear, learn, and understand the difficult lessons of life. This paper is a composite of my perceptions and truth about my career in Nursing Research and Symptom Science woven from the many facets that make up clinical research. I contend that symptoms, and theories, such as shape shifters and two minds, are this special composition of perception and truth that are the essence of research and science. I hope to illustrate this through review of some of my work and the lessons I have learned through my research career using fables.

Fables

Fables are a literary genre that is composed of a succinct fictional story, in prose or verse, that features animals, mythical creatures, plants, inanimate objects, or forces of nature that are anthropomorphized as well as interesting men and women that lead us to a particular moral lesson. Succinctly, a story with a “moral”. The moral is woven through our perceptions and a portion of truth. In my case, there are; forces of nature, inanimate objects, animal and creatures, as well as interesting people, that have woven my journey and lead me to the morals, I would like to share with you.

The most famous collection of fables is those credited to a man named Aesop who was believed to have lived in ancient Greece and reputed to be a slave and storyteller. To frame this journey, I would like to start with an Aesop’s fables to illustrate my central theme entitled a Crow and a Pitcher.

“A thirsty crow found a Pitcher with some water in it, but so little was there that, try as she might, she could not reach it with her beak, and it seemed as though she would die of thirst within sight of the remedy. At last she hit upon a clever plan. She began dropping pebbles into the pitcher, and with each pebble the water rose a little higher until at last it reached the brim, and the knowing bird was enabled to quench her thirst.” (Hamilton, Aesop, Weiss, & Hoffmire, 2015)

The moral of the fable according to some translations, is that necessity is the mother of invention, but I would add one that has applied to my research journey. Namely that each stone lifted brings you closer to the reward or each effort raises the “truth” closer to quench your thirst, “to know”. Further, while the fable identifies a single entity who dropped the pebbles, my research experience has not been singular but has included very generous mentors, colleagues and collaborators. I would like to share some of the pebbles and those individuals that have helped me with my thirst for understanding.

Symptoms – multiple pebbles

My research carrier has been formed from many knowledge pebbles of symptoms. I many would like to share some of that knowledge concerning work I have been involved with in two main symptoms; breathlessness (the medical termed dyspnea) and fatigue.

The culmination of the knowledge pebbles I have gained over the years have led me to the theories that help to form not only a theoretical approach that shape shifts but also is rightly described as of two minds.

Breathlessness. For over 20 years, I have been interested in understanding symptoms. My journey to understanding symptoms began with observations at the bedside with the symptom of dyspnea or breathlessness, which virtually all of my pulmonary patients experienced. As a pulmonary CNS, trained under amazing faculty, such as Molly Tyler, Marie Cowan, Margret Heitkemper, Joan Shaver, Nancy Woods, and Pam Mitchell at the University of Washington, I took a position at the University of Wisconsin Hospital and Clinics in Madison Wisconsin. In that position, during one day in the pulmonary clinic, I saw two women with COPD who came in with their daughters. They were on the same medications with essentially the same level of physiologic pulmonary obstruction. One was in a wheelchair, the other was asking how long it would take as she and her daughter had a whole day planned, and they needed to get out of the clinic as soon as possible. I was so struck by the contrast that I asked the one trying to get done “as soon as possible” if she could help me understand the difference between the two of them. She smiled at me, in a way that told me I was just not seeing the reality, and said, “My dear it is simple, it is all in our heads, it is how I think about it”. What she meant was not that her breathing was not any easier, but that how she thought about, managed and lived with her breathing challenges were choices she made, and she chose to coexist with her symptoms in a way she could continue to find the joy in each day. That day set me on a journey to understand the following; What does breathlessness mean to the patient? Why are some patients more breathlessness than others? How can we measure it? How can we help other patients optimally manage their breathlessness?

At the time, the symptom of breathlessness (or dyspnea) was evaluated as if it were a sign, like tachypnea or labored breathing. In fact, the key dyspnea measure at the time had a medical provider observe the patient’s breathing ask questions and mark a score about the severity. However, unlike outward signs a symptom is a perception of the sensations triggered by the underlying physiologic and biologic mechanisms and cannot be measured with the precision of a blood gas, respiratory flows or even simple respiratory rate. Particularly, at that time self-reported breathlessness or dyspnea, only had a minimal correlation with pulmonary physical measures or signs. Symptoms can reflect some physiological and psychological alteration taking place for the patient. For example, a worsening of dyspnea in a patient with chronic pulmonary condition may signal their condition has changed or is unstable. But, when should/does the patient seek care based on breathlessness? Symptoms for patients are a “canary in a coal mine” they are signals to the individual that require interpretation and potentially action. Understanding this interpretation drove me back to school to get my PhD at the University of Arizona.

The interpretation and subsequent decisions patients must go through to resolve the dangerous situation, is complex. Patients are inundated with inputs that can be confusing. What is actually captured in a verbal or numerical rating, that is associated with the question “how short of breath or breathless are you now?”

My first step in answering this question was my dissertation under the direction of Dr. Linda Phillips where I attempted to control the ventilatory input and focus the individual’s attention to identify differences in the appraisal of these sensations (Meek, 2000). Using magnitude estimation techniques and inspiratory resistance, I asked individuals with

chronic obstructive pulmonary disease (COPD) and healthy age and gender matched controls to evaluate a series of inspiratory resistance loads (i.e. creation of resistance to their ability to take a breath). Instructions were altered to determine the influence of variations in attentional focus on the inspiratory loads, to determine how altered attention might influence the perception of breathlessness. Two experimental conditions, the individual's typical breathing pattern and clearest memory of breathlessness, were used to alter the focus of attention and compare it with a control condition. Findings revealed significant differences only for the COPD group in both comparisons indicating that different focuses of attention based on previous exposure to sensations impacted the interpretation of the inspiratory resistive load intensity of a given stimuli, and thus contribute to alterations in the perception of breathlessness. Confirming, in a small way, what my previous patient had said: how she thought about her breathing, did it make a difference in her interpretation of her breathing.

Also, during my doctoral program, my fellow students and colleagues had numerous discussions about Leventhal's Illness Representation Theory, as many of us were studying various symptoms. Leventhal simplified this process by describing the symptom as a stimulus, that results in the patient assessing the importance of the symptom to cope, ignore or intervene based on the importance they have labeled on the symptom and its severity. As potentially only doctoral students are brave/naïve enough to do, we thought we could improve on the theory. Applying our nursing knowledge and experience, we felt it could be more explicit. We thus developed the Symptom Interpretation Model, that highlighted that patients make decisions about care seek that are linked to more than just the physiologic changes and may lead some to seek care, while others may not (Teel, Meek, McNamara, & Watson, 1997). So, to use the canary in the mind shaft as an example, at what point should the miner leave the shaft? Similarly, at what point should the patient seek care?

Following these efforts, it became clear that I would need to learn a lot more about how to measure a phenomenon that was influx and everchanging, thus I applied for and completed an instrumentation post doc, under the guidance of Dr. Joyce Verran at the University of Arizona. I examined change in breathlessness and when an individual might know it had changed enough to seek care and how the individual forms a schema of what their breathing should be and breathlessness typically pattern and when it is worse.

This work led to grants and collaboration with other disciplines, within and outside of nursing. Some findings included that while everyone (including healthy, asthma & COPD patients) experiences dyspnea, COPD patients experience more frequent dyspnea on a day to day basis. Furthermore, if you explore beyond frequency to how distressing breathlessness is, we found that COPD patients experienced not only increased distress with dyspnea but greater effort to breathe associated with dyspnea, even when their breathing/disease was "stable" compared to a patient with asthma. Using statistical techniques, I expanded upon post-doctoral work at the University of Arizona, I was able to understand at another level, what might be contributing to the differences in the degree of distress with dyspnea among individuals with COPD vs asthmatic. Specifically, individuals with COPD daily experience breathlessness while those with Asthma will have episodic breathlessness with periods of absolutely not breathing alterations.

In the next investigation, I explored the idea that past experience, along with physiology will influence how individuals define breathlessness. In this grant I followed over a year,

age and gender match healthy individuals and those with COPD, and Asthma. Going back to the question of when do patients seek care or not, we looked at the numerical threshold for the degree of breathing distress and effort (0-10) when healthy, COPD and asthmatic patients would seek care. The individual who had COPD or Asthma were similar in identifying an intensity of 7/10 and healthy individuals 6/10 before seeking care. We then looked at if patients had a wider range of scores before seeking care. That is, if individuals went from a score of 5 to 6 (1 point range), would they seek care, or would they require a large change in score to seek care. We found that healthy and asthmatic individuals had a wide range, with approximately 6 points for healthy and 5 for asthmatics, while individuals with COPD would seek care for a 3.5 point difference from baseline. This dissimilarity speaks to the differences in every day levels of breathlessness experienced by individuals with COPD, which again is consistent with their lived experience.

We also found that the majority of the explained variance for breathing distress and effort were emotional components such as anxiety as measured on breathing the Bronchitis Emphysema Symptom Checklist (BESC) and general cognitive function measured by the Mini Mental State Exam. Both of these accounted for between 22-24% of the variance in the average distress and effort experienced with breathlessness.

This led a former student of mine to explore the degree to which dyspnea affected quality of life (Hu & Meek, 2005). We measured health-related quality of life (HrQOL) with the SF-36 mental and physical components, affective qualities with the Positive and Negative Affect scale (PANAS), activity levels with the Pulmonary Functional Status and Dyspnea Questionnaire (PFSDQ) and depression and anxiety with BESC. Using multiple regression and path analysis, we determined the pathways most associated with the physical and mental domains of HrQOL. Not surprisingly, breathlessness was linked to both anxiety and negative affect which mediated the HrQOL mental domain. While breathlessness also impacted activity levels which mediated the HrQOL physical domain. Of course, this information was in a laboratory setting and the goal is to understand the experience of our patients better in their everyday life. To that end, Dr. Cathy Michaels and I collaborated on an analysis to evaluate the “natural language individuals use to describe their breathing and breathlessness (Michaels & Meek, 2004; Michaels, Meek, & Dedkhard, 2008). Interestingly, we found important differences in how individuals with COPD describe their breathing given the day to day fluctuations. For example, using a visual analogue scale (VAS) and measuring breathing effort and distress daily over a month, we found that individuals may use different words for relatively the same intensity potentially describing it one day as “breathless” and another as “tightness”. Using Linguistic Inquiry Word Count software program developed by James Pennebaker to examine the type of words used we found differences related to perceived intensity. Specifically, with higher breathing intensity was for individuals with COPD the more they increased their use of negative emotion words, especially those that reflect anger. Taken together this work illustrated the individual variation in interpretation of a symptom and the associated language used to describe it to those not experiencing it.

Given the language issues and the issues associated with the multiple sensations that give rise to the sensation of breathlessness, colleagues and I set out to develop a questionnaire that would facilitate evaluating the sensory qualities and emotional components that could be used in the laboratory and a clinical setting. We formed a research team that included a neurophysiologist Dr. Robert Banzett, a cognitive psychologist Dr. Robert Lansing, a physician Dr. Richard Schwartzstein and another nurse scientist Dr. Parshall a

long-time WIN member from New Mexico. We felt that given the sensory and perceptual challenges of breathlessness, that only when we could measure the symptom in a straight forward that could help us talk across laboratory and clinical settings could we gain a deeper understanding of our individuals' experience with breathlessness or dyspnea. We worked over eight years to test the questions in both the laboratory and clinical settings to develop what we termed, the Multidimensional Dyspnea Profile (MDP) (Banzett et al., 2015; Meek et al., 2012; Parshall, Meek, Sklar, Alcock, & Bittner, 2012). We found the instrument to be reliable, valid and responsive to changes in breathlessness or dyspnea (Meek et al., 2012; Parshall, Meek, et al., 2012). The MDP, to our knowledge, is the only psychometrically tested instrument confirmed and developed to meet the needs in both in a laboratory setting (with controlled stimuli to alter breathing) and in a clinical setting such as an emergency department, rehabilitation and outpatient clinics. The laboratory testing worked to link the controlled stimulus to specific questions such as "my chest and lungs feels tight" and "my breathing requires muscle effort or work" in hopes that we may be able to better identify the sensory and mechanistic paths that gave rise to breathing alterations. The laboratory test served to validate the descriptors of breathlessness used in the MDP, and link them with challenges to breathing, such as increased resistance to airflow and central stimulation with carbon dioxide (Banzett et al., 2015).

As part of our clinical testing, the MDP was given to 151 patients in the emergency department whose chief complaint was breathlessness or breathing distress. This investigation again provided pebbles of knowledge since those who considered their situation serious enough to seek emergent care, can recall with amazing consistency as assessed by interclass correlations (ICC). Specifically, how their rating of the immediate perception of breathlessness intensity that triggered seeking care an hour after arriving in the emergency department (ICC=.93) and two weeks after discharge (ICC=.72). This was also true for the associated emotional response at the same time points (1-hour ICC=.94, 2-week ICC=.78). Supporting that much of event is clear in their mental models of events as to be very reproducible into the proximate and distant future (Parshall, Meek, et al., 2012).

Much of my work in breathlessness put me in the position to, along with Dr. Richard Schwartzstein lead an interdisciplinary committee to develop the first Dyspnea Statement from the American Thoracic Society and the first consensus definition. This statement acknowledged the link between the symptom of dyspnea/breathlessness and influences of the many physiological, psychological, social, and environmental factors, that may induce secondary physiological and behavioral responses on how patients experience dyspnea/breathlessness. But key to this definition was the statement that it is a subjective experience of breathing distress, acknowledging that you cannot truly measure the sensation without asking the individual's appraisal ("Dyspnea," 1999). This document was updated in 2012 but the definition remained unchanged and has withstood the test of time (Parshall, Schwartzstein, et al., 2012).

Fatigue

My interest in symptoms has included work with the symptom of fatigue where I could use much of my instrumentation training to help refine and develop a new measure of fatigue that occurred as a result of a chronic condition such as COPD or as a result of therapy such radiation or chemotherapy in cancer. Investigating fatigue lead me to work with some truly outstanding nurse scientists who were trying to understand the presentation, interpretation and expression of the symptom in individuals undergoing cancer treatment. While at the University of Utah, as an Assistant Professor, I was able to work with

Dr. Lillian Nail, Kathy Moody, Susie Beck and a promising student at the time Anna Schwartz. All of who influenced my thinking about sensations and their interpretation, as symptoms that they would ignore, watch or attend to. This team undertook an ambitious project to understand the measurement of fatigue in cancer patients who were undergoing treatment for their cancer (Meek et al., 2000). We used four established instruments to measure fatigue, Profile of Mood States Short Form fatigue subscale (F_POMS-sf), Multidimensional Assessment of Fatigue (MAF), Lee Fatigue Scale (LFS), and the Multidimensional Fatigue Inventory (MFI) and a newly developed measure General Fatigue Scale (GFS). This project attempted to determine the difference that would be attained from slightly different questions concerning the symptom of fatigue. This proved very interesting in that while all tools performed relatively uniformly in terms of reliability and validity they varied in their sensitivity and responsiveness which resulted in a range of effect sizes from 0.14 to 0.49. Some of which seemed related to the way participants were asked about their experience of fatigue. For example: if you ask how much you agree or disagree with the statement “I feel tired”, or “physically, I feel only able to do a little”, or “I don’t feel like doing anything” you will get a very different magnitude to any change linked to the interpretation of these statements. This is consistent with the difference seen in the work Dr. Cathy Michaels and I did on natural language and breathlessness scores.

Also, working with another nurse scientist from the University of Arizona Dr. Terry Badger, also interested in fatigue and other symptoms associated with cancer treatment, we attempted to distill the symptom perceptions into a brief useful numeric appraisal (Badger, Segrin, & Meek, 2011). The instrument the Brief Symptom Distress Scale, ask individuals to identify the symptoms they are experiencing and rank them as most distressing to least distressing followed by assessing how distressing as a whole they are and how well the individual believes they can manage the symptoms. The instrument has been used in outpatient surgery settings, home health and in palliative care to evaluate the general symptom experience. In the original sample, fatigue was the most frequently experienced symptom with 69% reporting it followed, by sleep difficulties (57%) and pain (49%). However, when ranked, pain was the most distressing of the top three experienced, followed by sleep difficulties and then fatigue. Interestingly fatigue is more highly related to the overall distressing score ($r=0.30$) than pain ($r=0.21$) or sleep difficulties ($r=0.26$). But one of the key takeaways from this paper was the conditional probabilities of the symptoms involved, which further illustrate not just that symptoms are associated, but that identification of a symptom influences the probability of another symptom to be experienced. For example, if you identify sleeping difficulties you have an 80% probability of experiencing fatigue, but the opposite is not the same as identifying fatigue results in a lower (69%) probability of having sleep difficulties. Given these results if we put this in the context of symptom clusters co-occurrence does not provide a complete picture of and individuals symptom experience.

Shape Shifters and Two- Minds

The work I have participated in and the work with my current colleagues at Colorado has helped refine my philosophical and theoretical underpinnings. Our interdisciplinary team in biobehavioral science includes; Drs. Paul Cook, Nancy Lowe, Elizabeth Corwin, Karen Sousa, Sara Horton-Deutsch, Blaine Reeder, Sarah Schmiede, Teri Hernandez and Catherine Jankowski. They have challenged, advised, enlightened and informed my views on symptom science and symptom management. These collaborations have resulted in the development of two relatively recent conceptual frameworks that inform symptom

science and symptom management (Cook et al., 2018; Corwin, Meek, Cook, Lowe, & Sousa, 2012). I will now share how the research I have conducted and participated in has contributed to my shape shifting and becoming of two minds from a conceptual basis.

The metaphor of a “shape shifter” from folklore, is an individual that moves between states and may be seen differently by the same person at different times or by multiple individuals at one time. As we state in the article, the determinants of a symptom, are often seen as distinct from the symptom phenomena (Corwin et al., 2012). By disconnecting determinants and phenomena, we proposed that the complexity and dynamic nature of an individual’s experience is discounted, ignored and removed. This is also true when we label symptom determinants and phenomena as uniquely biologic or behavior. Consequently, we propose that determinants and phenomena do shift between each other, depending on the perspective of the observer and researcher. The shape-shifters approach to symptom science helps to clearly identify a systematic approach to investigation within a clear context the biobehavioral determinants and phenomena associated with symptoms. Dr. Cook has formally tested this approach in some of his work where fatigue predicted stress and social support at one time point and stress and support predicted fatigue at a later time point (Cook et al., 2016). These findings in this analysis propose a sequence that maybe perpetual, but provides support for the premise that shape shifting occurs among determinants and phenomenon. Approaching our investigation this way will provide different and potentially more complete answers to the questions we pose. Most recently, some of the same colleagues built on this approach and some important work from Daniel Kahneman, in an application to NINR for a center grant application for an exploratory center dealing with self-management in multiple chronic conditions. Dr. Cook along with our colleagues (Schmeige, Reeder, Lowe, Horton-Deutsch) published the theory recently as the “Temporal Immediacy: A Two-System Theory of Mind for Understanding and Changing Health Behaviors” (Cook et al., 2018). We propose that temporal immediacy, is a means of incorporating other disciplinary traditions in particular social psychology, cognitive science, behavioral economics with nursing to improve research and practice related to an individual’s health decision making and behaviors. I propose that this conceptual framework is particularly suited to symptom science and self-management. We have since labeled the conceptual framework as the Two Minds Theory (TMT).

The TMT describes two mental systems, an intuitive and a narrative system that act in parallel. The intuitive system, sometimes referred to as the “fast” system,² operates automatically, intuitively, involuntarily, and effortlessly and appears to be based in midbrain and/or lower cortical areas. The narrative system, also referred to as the “slow” system, is a more conscious, methodical, and deliberate mode of thinking that depends on the prefrontal cortex and people’s narratives about their experiences. The narrative system restrains the person from jumping to quick conclusions through deliberating, solving problems, computing, focusing, concentrating, and considering other data. The narrative system actually appears to be strongest at tasks involving imagery and expected effects on social relationships. In the TMT, it is important to note that neither system represents pure “reason” or “emotion,” that each system has different strengths, and that each is prone to its own type of mistakes.

To illustrate TMT, consider the craving a smoker has for a cigarette. The craving may be triggered by a chemical or emotional change stimulated by a stressful situation. The stimulus (stressful situation), evokes signals from perceptual systems that trigger a

cascade of learned associations. This happens rapidly, is usually outside of awareness, and may include procedural memories of past efforts to cope with similar situations and their emotional results. These learned associations may in turn cause the person to reach for a cigarette without even being aware of it. In this example, a situational stressor triggered automatic responses in the form of craving for a cigarette as well as instinctive responses to satisfy the craving that likely originate in non-cortical brain areas. This fast, automatic, and non-cognitive process results in the experience that many smokers have of putting a cigarette in their mouths before even being fully aware that they wanted one. At a later point in the scenario, the smoker might make judgments about the situation that are distinct from the initial instinctive perceptions, such as “I can’t believe I lit a cigarette even though I am trying to quit. I must be more stressed than I realized.” Such feelings of intention-behavior discrepancy are common among people trying to improve self-care behaviors, whether these involve smoking, diet, exercise, sleep hygiene, medication use, or others. Individuals often berate themselves for making “emotional” or “irrational” decisions in the moment and wish they could have kept in mind the logical arguments presented by their narrative mind. But the reality at the neurocognitive level, is that the narrative system is too slow, deliberative, and connected to conscious thought, for it to be able to interrupt the intuitive-system response.

This simple example of TMT illustrates the intention-behavior gap between the intuitive and narrative systems. The process of learning symptom self-management strategies is very experiential, a fact that can enlarge the gap between the recommended course of action for self-care patterns that may not have the optimal impact. A common example is seen in an individual with COPD and heart disease who experiences increasing levels of fatigue and automatically initiates learned behaviors of decreasing and modifying activities to reduce shortness of breath. Inactivity provides a short-term solution for the fatigue, the individual adopts the behavior, and gives the solution no further thought. If that same individual is used to the presence of a symptom, such as fatigue, and has consistently tried to reduce it by constraining their activity it may be difficult for them to consider an alternate response. Potentially this is where technology that provides feedback on the amount of daily physical activity, can be used to provide new objective information. In this case, there could be clear targeted goals of sensibly increasing physical activity in simple metrics such as steps per day with the overall goal of better physical functioning to reduce the symptom of fatigue. Over time, the intuitive system can be trained to take these objective data into account and to produce a more adaptive habitual response. Similarly, it may be useful to evaluate and provide feedback on symptoms such as fatigue on an ongoing basis. For example, if you ask, “are you in pain now?” (intuitive) versus “how has your pain been lately?” (narrative), we know that these questions will get slightly different responses.⁸ Repeated attention to one’s daily symptom levels may also help individuals with chronic conditions to develop more adaptive narratives over time. TMT provides a lens for understanding these measurement differences based on whether the intuitive or narrative system was activated by the question. It therefore becomes critical to ensure that the measurement method is aligned with the research question, and that interventions are targeted to the correct actionable mental system for eliciting sustained behavior change.

Fables Reconsidered

Symptoms, theories and fables are necessary elements of what goes in to understanding health and illness. But as I hope this review has illustrated, they are not sufficient for comprehensive understanding of how we can improve the lives of individuals who days

are filled with the interpretation, decision and care mediation of their symptoms. I would like to conclude with this Fable

The Gnat and the Bull:

“A gnat flew over the meadow with much buzzing for so small a creature and settled on one of the horns of a Bull and remained sitting there for a considerable time. When it had rested sufficiently and was about to fly away, it said to the Bull, “Do you mind if I go now?” The Bull merely raised his eyes and remarked, without interest, “It’s all one to me; I didn’t notice when you came, and I shan’t know when you go away.” (Hamilton et al., 2015, p. 55)

Moral: We may often be of more consequence in our own eyes than in the eyes of our neighbors.

I believe that over the course of my career I have been the gnat surround by many bulls who have allowed me to rest on their horns and benefit from their presence in my life and career. I like to believe that some of these bulls noticed my arrival and my departure. However, I am clear that the important truth of this fable for me is that with out those periods or rest and interchange, I would not have received the distinguished researcher award. I know too, that my contribution to symptom science and symptom self-management whatever magnitude it maybe would be diminished with my encounters with these bulls. Perceptions and truth are always in flux but as with symptoms the individuals’ perceptions define the truth for them and in my case, fill me with immense gratitude for those bulls I have known.

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The Carol A. Lindeman Award for a New Researcher Paper

**EXPLORING PERSPECTIVES OF
MEDICATION-ASSISTED TREATMENT
FOR OPIOID USE DISORDER**

*Krista L. Scorsone, MS, RN, PMHNP-BC
PhD Candidate
College of Nursing
University of New Mexico
Albuquerque, NM*

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Introduction

The US is in the midst of an opioid overdose epidemic, which is most pronounced in rural areas where the rate of fatal overdose is two-fold greater than in urban areas (Mack, Jones, & Ballesteros, 2017) Jones, & Ballesteros, 2017. This epidemic is largely driven by the overprescribing of opioids to treat chronic pain, a situation that can be traced to rural America (Monnat & Rigg, 2016) where higher rates of labor-based jobs lead to increased risk of occupational injury and associated disability due to chronic pain (Florence, Pack, Southerland, & Wykoff, 2012) Southerland, & Wykoff, 2012. Since treatment of chronic pain has historically involved a prescription opioid, use of opioids is perceived as less harmful and even necessary to maintain steady employment, embedding their use into the fabric of rural culture (Keyes, Cerda, Brady, Havens, & Galea, 2014). Moreover, given that prescription opioids are less potent, becoming more difficult to access due to enhanced prescription monitoring programs, and more expensive when purchased illicitly, many rural prescription opioid misusers have transitioned to injection heroin use (Cicero & Kuehn, 2014). This has led to a dual prescription opioid and heroin crisis in rural regions. In aggregate, these factors implicate rurality as an unrecognized risk environment for opioid-related harms. The nature and scope of this problem holds true in the rural counties of northern NM, where the national opioid crisis emerged in the late 1990's (Rossen, Bastian, Warner, Khan, & Chong, 2017), and where drug overdose deaths remain among the highest in the nation (New Mexico Department of Health, 2018).

Medication-assisted treatment (MAT) with buprenorphine, methadone or naltrexone is the global gold standard treatment for opioid use disorder (OUD) (World Health Organization, 2017). MAT reduces dependence on illicit opioids, opioid-related morbidity and mortality, the spread of needle-borne infectious disease, and the incidence of illegal behavior, with evidence also suggesting improved social functioning following therapy (Jones, Campopiano, Baldwin, & McCance-Katz, 2015; Sigmon, 2014). Although MAT's efficacy has driven it to become widely available in urban and rural areas, both nationally and in NM (Komaromy et al., 2016), it is still accessed half as frequently rurally, suggesting a possible association with the higher death rate. The reasons for this imbalance in obtaining MAT despite its wide availability are unknown.

Purpose: The factors underlying the reduced use of MAT to treat OUD in rural versus urban areas are not defined, and there is no information about how the experiences of rural individuals seeking MAT impact this disparity. As NM ranks among the top for opioid-related deaths in rural counties, this qualitative descriptive study aimed to explore the knowledge and perspectives of individuals in rural NM with OUD regarding MAT, and to describe their experiences seeking MAT.



Figure 1: Theoretical Framework guiding the research.

framework to explore the role of opioid use as it relates to feelings of disconnection and social loss (Inagaki, Ray, Irwin, Way, & Eisenberger, 2016), which are reinforced by multiple systems of oppression at the macro and micro levels. OUD and obtaining MAT occurs in the context of dynamic and multifaceted relationships between individuals and environments that both overlap and intersect to create a risk environment, which is broadly defined as the space in which a variety of factors interact to impact both the production and reduction of drug harms (Rhodes, 2009). These complimentary theories offer a lens through which the interconnecting forces that influence opioid use and its treatment in rural environments can be viewed (Figure 1). The integrated application of this theoretical framework uncovered ways to overcome stigma related to OUD and MAT, promote social justice, and enhance individual and community recovery capacity.

Theoretical Foundation

The frameworks of critical social theory, intersectionality theory and the brain opioid theory of social attachment were used to ground this research theoretically and guide the analysis of the data. Critical social theory was used to examine the socially constructed and historically constituted overarching power relations at the macro level (Kincheloe, McLaren, & Steinberg, 2011). Integrating intersectionality theory facilitated exploration of patient-level experiences and perspectives as they inadvertently become enmeshed in overarching power systems that create oppressive sociopolitical forces (Collins, 2012; Crenshaw, 1991) that impact MAT utilization. Integrating the brain opioid theory of social attachment provided a

Methods

Research design: The study protocol, which was a descriptive, qualitative design, received approval from the University of New Mexico’s Human Research Protections Office. Twenty participants who had experience with OUD and MAT were recruited by purposeful sampling. Male and female participants were recruited who were 18 years of age or older, living in northern NM, meeting DSM-V criteria for OUD, and were affected by MAT (either receiving, denied, or opted out). Adults unable to provide informed consent or were unable to read, understand, or speak English were excluded. Recruitment took place at a family health center in northern NM using a flyer that was posted in the waiting and exam rooms. Interested recruits contacted the researcher directly, informed consent was obtained, and a demographic questionnaire was completed. Audio-recorded interviews with each participant ranged between 40-90 minutes. A semi-structured interview guide was used to prompt discussion about experiences regarding MAT. Field notes about nonverbal communication and observations were also collected. After preliminary analysis of the initial interviews, follow up interviews were conducted with nine participants to solicit feedback on the initial findings, enhancing methodological rigor.

Data analysis: Transcribed interviews and field notes were analyzed using conventional content analysis involving open, axial and selective coding (Hsieh & Shannon, 2005) sixM. Annotated transcripts were read multiple times to derive the initial thematic coding. Continued analysis and thorough documentation of impressions led to the emergence of labels for the initial open coding scheme, which were then assessed for

patterns and grouped into meaningful clusters. Participant quotes that exemplified key themes were highlighted to provide rich descriptive information and link the data as a whole (Hsieh & Shannon, 2005; Thorne, 2008). Peer examination through collaboration with other qualitative research experts was carried out during the data analysis phase. To ensure trustworthiness, reflexive field notes were used to separate the researcher’s experiences, assumptions and values from the methodological decisions made, ensuring that the thematic coding best represented the participant’s perspectives.

Results

Key participant demographics are presented in Table 1. Five major themes related to MAT emerged from the data: ‘It’s Hard to Have to Wait’, ‘Suboxone is Better’, ‘Able to

Characteristic	Female (<i>n</i> = 10)	Male (<i>n</i> = 10)
Average Age	30.4 (range 23-50) yrs	41.7 (range 28-50) yrs
Current MAT		
None	2	1
Buprenorphine	8	9
Methadone	0	0
Average Time in MAT	3.3 (range 1-6) yrs	4.5
Average Time to Start MAT	3.8 (range<1-14) yrs	4.7 (range 0-20) yrs

Table 1: Participant demographic overview.

Live a Normal Life’, ‘Staying Clean’, and ‘No Matter What, You’re Labeled’.

It’s Hard to Have to Wait: Participants described several challenges in obtaining MAT treatment, but overwhelmingly, the greatest barrier was the long waitlists for both methadone- and buprenorphine-based treatment: “Everybody’s booked, and all I mostly heard is, ‘We’re not accepting new patients.’ Well, then how do you get on it? How? Nobody could answer that for me.” A novel finding was an apparent gender disparity regarding access to MAT. Pregnant female participants were able to access buprenorphine more easily than male participants: “If there’s not 20 pregnant women in front of me, because I’m a male. I think that’s the biggest problem. There’s no help.” These obstacles drove participants to rely on diverted buprenorphine prescriptions while waiting to formally start MAT: “The whole six years, I bought [buprenorphine] off the street is what I did. I had to do what I had to do, but it was better than buying heroin ...”

Suboxone is Better: Participants favored buprenorphine over both heroin and methadone. They described many advantages of buprenorphine, notably: “Because it’s legal. You have it for the whole month, and it works”. For some participants addicted to the act of shooting heroin, buprenorphine reduced cravings, but it did not alleviate the desire to inject. Methadone was associated with various disadvantages, including feeling intoxicated, restrictive treatment policies and long-term health consequences, particularly tooth loss. Participants reported “with methadone, you get high”, and polysubstance use while on methadone was common practice. Despite the many benefits to buprenorphine, participants did not like that they were “still hooked” on a drug. Buprenorphine was considered to be better but not ideal because of their dependency on the medication.

Able to Live a Normal Life: Participants described buprenorphine as a “miracle thing” because it helped them live a functional, productive and normal life. Nevertheless, they described a separate reality, distinct from that which a “normal” person experiences. This required a negotiation of their identity within a separate and parallel world: “You’ve just got to push on. I don’t know how a normal person would deal with it. I’m not normal. 14 years on that stuff, it does something to you.” In recovery, participants were forced to face the physical, social, emotional and legal consequences of their opioid use. As difficult as this was, participants found strength in the belief that through their recovery

they could help others: “That’s the only thing we can do. We can’t go back and fix the people we hurt or ourselves that we hurt, but we can carry on and try to make it better for everybody else.”

Staying Clean: Participants discussed the importance of building a support system to help them stay clean. They found support groups to be helpful in facilitating their recovery, preferring self-help over provider-led groups. They found it difficult to connect with providers who had not shared the experience of being addicted: “I mean, someone who is clean 20 years talks to you about how they’ve been clean these 20 years there’s more hope there than someone who is saying, Just leave it. It’s easy. Just leave it. Just let it go. It’s not hard.” Participants discussed using Narcotics Anonymous (NA) but did not always feel supported in their recovery: “they look at Suboxone as a drug, because to them, they don’t accept it. Like I go to NA meetings, and they don’t accept it as treatment. They tell me that I’m still on drugs.”

Participants appreciated having a provider that “won’t give up” on them even during their times of weakness and setback. When they did experience a relapse, with a supportive provider they could be honest about their circumstances: “That’s why this doctor here is so good, because she never gave up on me, and that just gave me a little bit more confidence that I needed in myself, because it wasn’t there anymore.” Notably, across care settings, inconsistencies in the policies regulating MAT access were mentioned. Participants commented on variability in healthcare providers’ knowledge level about opioid use disorder and MAT: “I’ve come across some doctors who don’t even know what suboxone is. I found that kind of weird”. Some encountered providers with negative biases and who were dismissive of their health concerns once it was understood that the participant was on MAT. Participants avoided providers who were judgmental and that they could not trust.

No Matter What, You’re Labeled: Despite treatment successes with MAT, participants still experienced stigma in the community and they voiced a strong desire to be afforded dignity and respect. Routine and insensitive rhetoric associated with the word “addict” was hurtful, and it perpetuated their social marginalization. There was a belief that if the members of the community could move beyond labelling and judging, true opportunities to heal would emerge. Community members were viewed to have limited knowledge about MAT, which contributed to public misunderstandings and the belief that buprenorphine is “just another drug to get addicted to”. Suboxone was mistakenly considered to be a substitute for heroin. Overall, participants expressed a desire for more education to reduce stigma for those seeking MAT.

Discussion

Long waitlists to initiate methadone and buprenorphine treatment are well-documented (Dennis et al., 2015; Jones et al., 2015; Sigmon, 2014). Findings from this research align with these studies, establishing that long waiting times for treatment entry represent the greatest barrier for participants trying to access MAT rurally. Notably, both male and female participants reported that men typically experience longer wait times. This was particularly the case compared to pregnant women, because MAT is known to reduce maternal substance abuse and improve health outcomes for both the mother and the unborn child (Klaman et al., 2017; Short, Hand, MacAfee, Abatemarco, & Terplan, 2018). For buprenorphine, the limitations to the number of patients that can be treated by providers essentially moves pregnant women to the top of a waitlist, inadvertently reducing MAT access for both males and females who are not pregnant. Inadequate access to MAT led participants to seek diverted buprenorphine to self-treat, a concept that is supported in the literature (Carroll, Rich, & Green, 2018; Schuman-Olivier et al.,

2010). Regarding MAT preferences, all participants perceived buprenorphine to be the superior MAT pharmacotherapy. Participants expressed negative feelings and beliefs about methadone, including that it is a dangerous narcotic with numerous deleterious side effects. This aligns with long-standing negative patient beliefs about methadone that are documented in the literature, (Gryczynski et al., 2013; Stancliff, Myers, Steiner, & Drucker, 2002; Zaller, Bazazi, Velazquez, & Rich, 2009).

Once participants were receiving MAT, they returned to the normal activities of daily living. A novel concept that emerged from the data was that the transition from heroin use to life on buprenorphine created a “new normal”. Although everyday life became more consistent with what is culturally considered to be normal, participants recognized a difference in themselves. Public attitudes about MAT and their own experiences of feeling dependent on a medication made life feel normal yet at the same time different. This forced them to construct a separate social world embedded in the culture of drug use and recovery. Negotiating their social identity within this “new normal” space was a central theme of their existence and is an unappreciated dimension to the MAT experience.

Evidence-based practice guidelines for the treatment of OUD, recommend that MAT pharmacotherapy be combined with psychosocial interventions (WHO, 2017). However, existing literature documents the national shortage of behavioral health providers with the expertise to deliver traditional psychosocial treatments in rural areas across the US (Andrilla, Patterson, Garberson, Coulthard, & Larson, 2018). It follows that community treatment and self-help groups such as NA could represent a widely accessible alternative, offering routine meetings that are available to anyone regardless of insurance status or ability to pay (Krawczyk, Negron, Nieto, Agus, & Fingerhood, 2018; White, 2011). However, NA is guided by the 12-step, sobriety-based philosophy, requiring abstinence from all opioids (White, 2011). Based on this viewpoint, individuals receiving MAT with opioid-agonist medications are not considered “clean” (Krawczyk et al., 2018)dbl. Consequently, participants encountered stigmatizing experiences attending NA in their community. Ultimately, for some participants, who were dependent on NA for psychosocial support, the experience of stigma had a detrimental influence on treatment outcomes and perpetuated feelings of social pain and rejection.

Overcoming Stigma: In the US, the general public holds stigmatizing perceptions about substance use (Ashford, Brown, & Curtis, 2018; Barry, McGinty, Pescosolido, & Goldman, 2014; Netherland, 2012). Research has documented that negative terms, including “opioid addict” and “substance abuser” elicit greater negative explicit bias (Ashford et al., 2018). The historically accepted view of addiction as a social and/or moral problem has contributed to negative perceptions of individuals’ who struggle with OUD, providing the rationale for discrimination, labelling and de-humanization of those who are afflicted. While using heroin, participants were labeled “addicted”, and yet, after they were in treatment and receiving MAT, they were labelled as “still addicted”. Despite treatment successes and sustained recovery, they were still stigmatized and treated differently. The public misconception that MAT pharmacotherapy is simply replacing one addiction for another intensifies negative beliefs and stigma. Altering the public discourse to include positive terms related to OUD and its treatment represents an opportunity for improved communication to alleviate marginalization. This is a necessary first step to overcoming stigma for individuals suffering from OUD and their families.

Limitations

This research was focused on obtaining information from individuals suffering from OUD with experiences seeking MAT. It could be argued that restricting the focus to these

individuals excludes the important perspectives of others, including providers, family members and community members. Input from this broader group is indeed important to fully understand the dynamics that influence experiences with MAT. However, this study was restricted to recruitment of participants suffering from OUD and seeking MAT to address a gap in the literature regarding the experiences surrounding MAT from this perspective. Also, rural-specific barriers to obtaining MAT experienced by those with OUD are likely regionally contextual. We argue that the findings of qualitative research are intended to report on the unique experiences of the participants and are not typically intended to be generalizable, although through rich description the research findings are likely transferable to other settings as appropriate.

Conclusion and Implications

Key system-level barriers have been previously identified, and in many cases addressed, yet the rural-urban disparity in access to MAT persists. Results from this study contribute to our knowledge about OUD and its treatment in rural communities that have clinical and policy implications. Long waitlists for MAT represented a key barrier that drove diversion for self-treatment. Policy initiatives have supported the general expansion of MAT; however, prescribing buprenorphine is a provider preference, involves additional training, and is not a requirement. Consequently, there are knowledge gaps across care settings that drive bias among providers in various specialties. A potential policy solution would be to either incentivize or require all primary care and family practitioners to be trained in and provide OUD treatment, including advanced practice nurses who are more likely to work in rural areas (DesRoches et al., 2013). This would further expand MAT access and address a novel key barrier uncovered in this study. Second, there was a general desire to have enhanced education opportunities about OUD and MAT available in the community. Specifically, MAT was generally viewed by the public as replacing one opioid addiction with another leading to stigma despite success with recovery. To help mitigate the destructive impact of stigma, targeted community-based outreach programming, supported by community members and leaders, as well as the individuals themselves in recovery, would be a valuable strategy. Nurses are uniquely positioned to take a leadership role in reducing stigma in this context through education, fostering resiliency, and promoting health in individuals and communities impacted by OUD.

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Grant Support: This project was fully funded by an American Psychiatric Nurses Association Research Grant (awarded to K.L.S.).

Abstracts of Symposium Presentations

**BIOBEHAVIORAL SELF-MANAGEMENT OF
CHRONIC CONDITIONS: FAST AND SLOW
BEHAVIOR CHANGE**

BIOBEHAVIORAL SELF-MANAGEMENT OF CHRONIC CONDITIONS: FAST AND SLOW BEHAVIOR CHANGE

Overview: Biobehavioral Self-Management of Chronic Conditions: Fast and Slow Behavior Change

Paul F. Cook, PhD, Associate Professor *Teri L. Hernandez, PhD, Assoc. Professor*
Catherine Jankowski, PhD, Assoc. Professor *Mary Beth Makic, PhD, RN, Professor*
Paula Meek, PhD, RN, Professor *Ginette Pepper, PhD, RN, Professor*
Blaine Reeder, PhD, Assistant Professor

*University of Colorado College of Nursing
Aurora, CO*

Behavior change is the foundation of self-management for all chronic conditions. Frequently, symptoms are the signals used by patients to identify the need to modify or change a behavior. Symptoms are multidimensional and meaningful; “symptom” is often defined as a subjective awareness of an internal state that is considered a disturbance to the individual. Although symptoms often create distress, the process of changing one’s own health behavior to reduce or prevent symptoms can be difficult. We propose the Two Minds Theory (TMT) (Cook, et al. 2018), a novel approach to understanding biobehavioral self-management of symptoms based on the functioning of two separate cognitive systems. Lack of agreement between these systems creates gaps between people’s intentions and behaviors. However, TMT also suggests new avenues for interventions that promote effective self-management in persons with chronic health conditions.

The TMT is based on the work of Nobel laureate Daniel Kahneman, whose popular book *Thinking, Fast and Slow* (2013) provides a window into why behavior change is so difficult. TMT posits that behavior change requires coordination between the brain’s Intuitive (fast-acting, autonomic and heuristic responses) and Narrative systems (slower-acting, involving conscious thoughts and focused attention). At the Intuitive level, symptoms are visceral experiences that directly impact patients’ physical and cognitive functioning, as well as self-care behaviors such as physical activity and sleep. At the Narrative level, symptoms alert individuals with chronic conditions that something is wrong. The symptom may be interpreted as a sign of self-care failure, disease progression, or the need to increase self-care or seek additional care. TMT suggests that patients report their Narrative interpretations and planned responses, but that their actual self-management behaviors depend on their more immediate Intuitive-level perceptions and reactions.

In this symposium an overview of the TMT theoretical framework will be presented followed by examples of how to operationalize and apply TMT in biobehavioral research with different chronic conditions and symptom types. Dr. Cook will begin the symposium by elaborating on the TMT and the parallel Intuitive and Narrative processes underlying behavior, and will suggest ways that researchers can target both the fast Intuitive system and the slower Narrative system to support self-management behavior change. The second presenter, Dr. Reeder, will provide an overview of considerations for evaluating and selecting sensor technologies to measure Intuitive-level processes, based on results of lab- and field-based test deployments from his NSF-funded HomeSHARE study. The third presenter, Dr. Hernandez, will present data from her studies of pregnant women to illustrate the links between the TMT and nutrient intake behavior. In the fourth presentation, Dr. Makic will present results from a mixed-methods study demonstrating the application of TMT to understand co-occurring sleep patterns, stress responses, physical activity, and fatigue in persons living with HIV.

The symposium presenters will illuminate how TMT can inform future biobehavioral science in a wide range of health conditions and behavior change scenarios by targeting the intention-behavior gap to improve self-management for individuals with chronic conditions.

BIOBEHAVIORAL SELF-MANAGEMENT OF CHRONIC CONDITIONS: FAST AND SLOW BEHAVIOR CHANGE

We're of Two Minds:

Using a Novel Theory to Explain and Improve Symptom Self-Management

Paul F. Cook, PhD
Associate Professor
CU College of Nursing
Aurora, CO

Laurel Messer, RN
PhD Student
CU College of Nursing
Aurora, CO

Paula Meek, PhD, FAAN
Professor
CU College of Nursing
Aurora, CO

Aims: Successful self-management of chronic conditions requires people to monitor and respond to symptoms, and to change long-standing behaviors like physical activity, sleep, and smoking. People often enter the process of health behavior change with excellent intentions, but struggle to actually modify their behavior. This problem arises because people's intentions are narratives filtered through memory and language, which inaccurately reflect their in-the-moment decisions or actual behaviors.

Theory Description: Two Minds Theory (TMT) is a neurocognitive model that explains intention-behavior gaps based on two distinct mental apparatuses, an Intuitive system that generates behavior based on cognitive heuristics, biases, and autonomic responses, and a Narrative system that focuses attention and produces thoughts after the fact. TMT posits that behavior arises out of the Intuitive system, while the Narrative system generates explanations and interpretations about past behavior as well as statements of intention about future behavior.

Theory Development Approach: A version of TMT underpins much of the research in behavioral economics. We argue that the idea of temporal immediacy can parsimoniously explain these well-known findings. In this presentation we also show how TMT aligns with recent evidence from cognitive neuroscience that suggests our behaviors depend more on Intuitive-level processes than on Narrative-level conscious thoughts, and with findings from philosophy of consciousness about the role of the mind as a commentator rather than an initiator of behavior. Finally, we apply TMT to nursing symptom science. We discuss how this theory can be used to understand within-person variability in symptoms and behavior using data from sensor technologies, mobile surveys, and biological measures. Finally, we discuss how TMT can be used to create better self-management interventions.

Application to Nursing: The authors published a recent theory paper using TMT to explain intention-behavior gaps in health behavior. In the current presentation, we describe the application of TMT to explain symptom perceptions and self-management in a range of chronic conditions. Our version of TMT uses the concept of temporal immediacy—a description of experience as either “now” or “usually”—to determine whether researchers will obtain information about Intuitive experience and behavior or Narrative beliefs and intentions for the future. We suggest that clinicians can change behavior by modifying Intuitive responses, or through Narrative processing to inform the next Intuitive decision.

Conclusions: TMT has important implications for nursing practice, where many interventions still rely on the idea that practitioners can persuade patients to adopt healthier behaviors by tapping into the Narrative system alone. We suggest a TMT-based framework in which effective interventions help to change behavior through habit formation, social imagination, mindfulness, environmental prompts, or consideration of intuitive solutions. TMT also leads to recommendations for research using intensive within-person data from biobehavioral measures to capture Intuitive-level processes, rather than retrospective summary measures that tap the Narrative system and are not directly linked to behavior.

Citation: Cook, P.F., Schmiede, S. J., Reeder, B., Horton-Deutsch, S., Lowe, N., & Meek, P. (2018). Temporal immediacy: A two-system theory of mind for understanding and changing health behaviors. *Nursing Research*, 67, 108-121.

BIOBEHAVIORAL SELF-MANAGEMENT OF CHRONIC CONDITIONS: FAST AND SLOW BEHAVIOR CHANGE

Feasibility of Sensor Technologies to Study Two Minds Theory and Behavior Change

Blaine Reeder, PhD
Assistant Professor
College of Nursing
University of Colorado Anschutz
Aurora, CO

Kay H. Connelly, PhD
Professor
Informatics, Computing, and Engineering
Indiana University Bloomington
Bloomington, IN

Aims: This presentation will provide an overview of considerations for evaluation of wearable, mobile, and smart home sensor technologies to support behavior change in relation to Two Minds Theory. Sensor data from the HomeSHARE infrastructure project will be presented as illustrative examples (NSF Award #: 1629202, 1629468, 1625451, and 1629437).

Background: *Digital health* is a concept that has emerged with the advent and widespread availability of consumer-grade “smart technologies”. These technologies are typified by onboard sensors that measure a range of behaviors and allow sharing of data for research or health-related purposes. Technologies can be broadly classified as “smart home” (home-installed activity or door sensors), “mobile” (smart phone or tablet), or “wearable” (e.g.: wrist-worn actimeter, sleep monitor, heart rate monitor, or continuous glucose monitor). While these technologies hold great opportunity to measure Intuitive-level responses and deliver tailored messages for behavior change using Two Minds Theory, their function and acceptability must be understood before their potential can be realized in research and everyday life.

Methods: Since 2013, we have evaluated three smart home platforms and numerous mobile and wearable technologies through lab- and field-based tests for function, acceptability, cost, and implementation factors. Starting in April 2018, we deployed four continuing field tests of smart homes in conjunction with smart watches and mobile self-report apps in Colorado ($n = 2$) and Indiana ($n = 2$). In September 2018, we deployed the first 2 of 30 smart home/wearable packages with older adults enrolled in a study using a biobehavioral mobility monitoring protocol.

Results: Lab- and field-based deployments have resulted in a set of evaluation considerations for all technologies and an evaluation framework that can be used to assess wearable sensors for TMT-based studies. Field tests have yielded data management and analytic methods to visualize real-world smart home data. Figure 1 shows data from a 2-person test home, averaged over July 2018 by hour of day, where one resident routinely spends time in the kitchen in the early morning and activity spikes in the afternoon when both residents are home from work. All field test and live participant technology installations will continue to collect sensor data as new homes are added.

Implications: Smart home, mobile, and wearable sensor technologies have great potential to support studies informed by Two Minds Theory through objective measurement of Intuitive-level responses. However, selection of these devices is contingent not only how they can support the constructs of a theory but also on an understanding of how they will function and be perceived in real-world settings. Our framework can help researchers make these decisions.

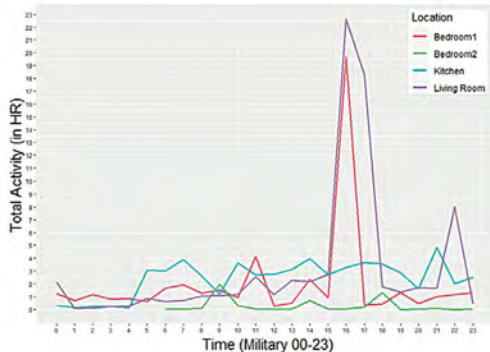


Figure 1. Smart home data for 2-resident home for July 2018 averaged by hour of the day

BIOBEHAVIORAL SELF-MANAGEMENT OF CHRONIC CONDITIONS: FAST AND SLOW BEHAVIOR CHANGE

Nutrition Therapy Closes Intention-Behavior Gaps in Postpartum Gestational Diabetes

*Teri L. Hernandez, PhD, RN
Associate Professor of Medicine and Nursing
University of Colorado
Aurora, CO*

*Jill Bastman, BS, RN
University of Colorado
Aurora, CO*

*Sarah S. Farabi, PhD, RN
Assistant Professor of Nursing
Goldfarb School of Nursing
St. Louis, MO*

Background: The immediate postpartum period is characterized by enormous physiologic, metabolic, and psychosocial changes. Large fluid shifts are accompanied by weight loss and insulin sensitivity is restored, all superimposed by increased metabolic demands to support lactation, fragmented sleep, and heightened stress from transformed family demands. Antepartum, the cornerstone to glucose control in women with gestational diabetes mellitus (GDM) is nutrition therapy. Postpartum, continuation of high quality nutrition facilitates restored insulin sensitivity and ensures optimal milk quality to support neonatal growth/development. The overwhelming changes, however, may override their intent to continue high quality nutrition, exemplifying an intention-behavior gap that supports a return to previous unhealthy habits.

Aims: This study was designed to determine the effects of an 8-week intensive eucaloric nutrition intervention (starting with all food provided, and tapering to independent food choices with intensive nutritional and psychosocial support/education) in immediate postpartum obese women who had GDM (ppGDM) on: (1) measures of biobehavioral, Intuitive variables of 24-hour patterns of glycemia and glucose tolerance (75g OGTT); (2) measures of Narrative variable habituation (reduced attention); and (3) outcome variables including metabolic measures, milk quality, and subjective daily measures (fatigue, well-being, pain). Pre-/post-tests of habituation and attention factor will be measured.

Methods: Two Minds Theory (TMT) posits that behavior change requires coordination between the brain's Intuitive (fast-acting, autonomic or heuristic) and Narrative systems (slower-acting, requiring focus). Our hypothesis is that ppGDM exemplify the intention-behavior gap, and TMT may be leveraged to modify habitual dietary patterns by first providing high-quality nutrition, retraining behavior over 8 weeks and tapering provided nutrition back to independent food choices. Initially, dietary intake patterns were studied at 2 weeks and 4 months postpartum in normal-weight (NW; $n = 29$), obese (OB; $n = 11$), and ppGDM ($n = 9$) using standard 3-day recalls (Nutrient Data Systems for Research software) in a prospective longitudinal study of lactation and infant growth.

Results: At 2 weeks, compared to NW (BMI 24 ± 4 kg/m²) and OB (BMI 32 ± 4), ppGDM (BMI 31 ± 4) reported hypocaloric energy intake (ppGDM/NW/OB: 1675 vs. 2311 vs. 1882 kcals/day). Moreover, they consumed higher than recommended total (ppGDM/NW/OB: 38% vs. 34% vs. 34% of total energy) and saturated fat, lower total carbohydrate (ppGDM/NW/OB: 44% vs. 48% vs. 49%), and all women consumed lower protein (ppGDM/NW/OB: 18% vs. 17% vs. 12%). Importantly, ppGDM uniquely reported reduced micronutrient intake, including fiber, beta carotene, vitamins D, E, K, folate, and calcium. Patterns were similar at 4 months. These findings support that ppGDM do not bridge high quality nutrition from ante- to postpartum, and consume a less healthy diet compared to NW and OB counterparts.

Conclusions: The physiological, metabolic, and psychosocial changes in postpartum women create a situational intention-behavior gap that prevents extension of antepartum high quality nutrition in ppGDM. Using TMT to modify an intensive nutrition intervention to retrain behavior may create *dishabituation* via increased focused attention or learning new responses, allowing for sustained healthier diet behaviors and nutrition-sensitive improvements in 24-hour patterns of glycemia and glucose tolerance in these high-risk group of women.

BIOBEHAVIORAL SELF-MANAGEMENT OF CHRONIC CONDITIONS: FAST AND SLOW BEHAVIOR CHANGE

Intuitive-Level Processes Predict Fatigue Symptoms in HIV

Mary Beth Makic, PhD, Professor
Paul F. Cook, PhD, Associate Professor
Danielle Gilbert, Research Assistant
Catherine Jankowski, PhD, Associate Professor
Nasser Al-Salmi, PhD Student/Research Assistant

University of Colorado College of Nursing, Aurora, CO

Aims: Fatigue is the most common symptom experienced by persons living with HIV (PLWH), and can interfere with successful self-management. In prior research using within-person daily surveys, our team demonstrated that PLWH's average fatigue symptoms depend on everyday variations in self-reported stress and social support. We also predicted that individual PLWH's fatigue symptoms would fluctuate over time.

Rationale: This corresponds to the difference between Narrative-system processes (fatigue on average) and Intuitive-system processes (variable daily experiences of fatigue) posited in Two Minds Theory (TMT). TMT suggests that biobehavioral factors affect symptom experiences, including some factors that are inaccessible to conscious awareness. We conducted a mixed-methods study to understand PLWH's fatigue and related experiences.

Methods: 30 PLWH completed daily surveys on a smartphone including the 4-item PROMIS fatigue short form and other brief self-report forms used in our prior work for ecological momentary assessment of PLWH. To capture intuitive-system variables outside of language, participants used a FitBit Alta™ wristband to monitor their physical activity (PA), heart rate, and sleep parameters for 30 days. PLWH also participated in a short interview about fatigue, which was analyzed using open coding.

Results: We first conducted descriptive analyses to characterize PLWH's sleep quality, activity level, stress, mood, social support, coping, and sense of control over daily life. Based on 901 monitoring days with 38%-62% data completeness, PLWH had significant day-by-day variability in fatigue and related symptoms. PROMIS fatigue scores varied between persons from the 36th to the 77th percentile, but individuals also experienced day-by-day fluctuations in fatigue up to 42 percentile points. Sleep was similarly variable, with 32% of PLWH having average sleep efficiency below the "normal" cutoff of 85%, and 36% of nights showing interrupted sleep. PA varied between persons, but was only weakly related to sleep metrics ($r_s < .15$). In qualitative interviews PLWH expressed surprise that their sleep was so poor, supporting TMT's distinction between narrative and intuitive processes. We then used univariate fixed-effects multilevel models in exploratory tests of predictors. Daily fatigue was predicted by sleep efficiency ($p = .004$), interrupted sleep ($p = .05$), % of time in REM sleep ($p = .01$), and multiple survey variables including stress, coping, social support, perceived control, and mood ($p_s < .02$). Heart rate variability, a physiological indicator of the ability to recover from stress, also predicted fatigue, $p < .001$. Sensor measures of PA and other heart rate metrics did not predict daily fatigue.

Implications: Our findings support daily stress and social support as predictors of fatigue among PLWH, and these data extend those findings to the level of day-by-day variability in fatigue within persons. Importantly, sleep efficiency, sleep fragmentation, and HRV, measured by unobtrusive sensors, each predicted fatigue and may be novel targets for intervention to improve self-care behavior in PLWH. Findings support the importance of intuitive-system variables in understanding daily experiences, as suggested by TMT.

Funding: Funded by an intramural grant from the CU College of Nursing's Biobehavioral Symptom Science area of excellence, with additional infrastructure support from NIH grant M01RR00051.

Abstracts of Symposium Presentations

**ENHANCING CARE AND IMPROVING
HEALTH ACROSS THE CANCER CARE
TRAJECTORY**

ENHANCING CARE AND IMPROVING HEALTH ACROSS THE CANCER CARE TRAJECTORY

Overview: Enhancing Care and Improving Health across the Cancer Care Trajectory

Sarah C. Reed, PhD, MPH, MSW
Postdoctoral Scholar
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA
screed@ucdavis.edu

Janice F. Bell, PhD, MN, MPH, RN
Associate Dean of Research and Professor
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA
jfbell@ucdavis.edu

This symposium session highlights research focused on the growing population of US cancer survivors which, by 2020, is expected to exceed 20 million. Along with this population growth, demand for cancer care and related expenditures have increased dramatically. At the same time, national reports have declared cancer care a crisis—drawing attention to unmet healthcare needs; inattention to symptom management and psychosocial issues; inadequate patient-provider communication; problems with care coordination and transition management between oncology and other care providers; patient-provider differences in care expectations; and the implications of these issues for family members and other caregivers. Despite new efforts to address concerns across the cancer care continuum, research lags behind.

Recognizing the magnitude of these concerns, recent recommendations suggest that within the cancer care continuum, specific attention and support are required for both the type of care (e.g., diagnostic, active treatment, survivorship) that is needed as well as transitions between the types of care. Equally important is the growing call to understand and intervene with the effects of health disparities across the cancer care continuum. Discussions between oncology care providers and patients with cancer concerning psychosocial care needs, goals of care, prognosis and care planning, particularly at transition points like survivorship and end of life care are often difficult, delayed, or insufficiently addressed. In particular, rural residence and patient travel distance have been increasingly recognized as important and understudied disparities in cancer care. As the complexity of cancer care increases, identifying ways to better engage patients and their families, in addition to the cancer care team is critical. Health technology holds significant promise in addressing fragmented and disorganized care and improving patient-provider communication and care coordination, supporting patients, caregivers and family members as partners with their cancer care team.

The researchers presenting in the four presentations in the symposium used a variety of methods to study cancer care issues important to nurses, from diagnosis, treatment, and survivorship to end-of-life. Topics include examining the effect of rurality and distance to cancer treatment on psychosocial distress and depressive symptoms among patients newly diagnosed with cancer; the usability of a technology-enabled care coordination application among patients with cancer initiating chemotherapy; examining associations between symptom support and future care discussions in routine oncology care of patients with advanced cancer; and describing the quality of survivorship care communication experiences of older adults with cancer.

This session will be useful to nurses and other health professionals interested in clinical care, research and policy initiatives across the cancer care trajectory.

ENHANCING CARE AND IMPROVING HEALTH ACROSS THE CANCER CARE TRAJECTORY

Associations of Rurality and Distance-to-Treatment with Psychosocial Outcomes

*Angela E. Usher, MSW, LCSW, OSW-C
Doctoral Student
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA*

*Janice F. Bell, PhD, MPH, MN
Associate Dean of Research and Professor
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA*

Aim: This study examines patient-reported psychosocial outcomes (i.e., overall distress, items on a distress problem checklist, depressive symptoms) in newly diagnosed cancer patients receiving care in a NCI-designated Comprehensive Cancer Center (CCC) by residential rurality, and driving distance-to-treatment.

Background: Approximately 20% of people diagnosed with cancer in the United States travel great distances for treatment from small towns and isolated rural areas because most CCCs, nationally recognized for providing the highest level of leading-edge cancer care, are located in urban areas. Rural cancer patients face other unique challenges (e.g., access to care and support) which may also contribute to greater psychosocial distress when compared to urban-dwelling patients. To date, few studies have focused on these concerns.

Methods: We used three years of data collected from newly diagnosed patients between January 1, 2015 and December 31, 2017 in the Supportive Care Screening Questionnaire, a tool based on the National Comprehensive Cancer Network (NCCN) Distress Thermometer/Problem List and the Patient Health Questionnaire-2 (n=5,742). Using analysis of variance (ANOVA) adjusted for multiple comparisons with the Bonferroni correction we summarized and compared psychosocial outcomes, first across four Rural Urban Commuting Area (RUCA) categories, and second across distance-to-treatment quartiles based on street-network driving miles from patient residence to treatment computed in ArcGIS (version 10.5). Stata version 15 was used for all statistical analyses, with significance set at ≤ 0.05 .

Results: Overall, most patients (64%) had high distress scores. Compared to urban residents, those living in large and small rural areas had significant findings in two distress domains. In practical distress concerns, rural patients reported higher distress related to information needs ($p=0.05$), lodging ($p=0.001$), and transportation ($p=0.03$); and in health distress concerns, they reported higher rates of distress related to treatment decisions ($p=0.03$), fatigue ($p=0.03$), and weight-loss ($p=0.02$). There were no significant differences in the emotional and social distress domains between patients from urban and rural areas. Compared to patients who traveled 15 miles or less to treatment, those who traveled 65 miles or more had the highest scores in the emotional ($p=0.01$), practical ($p=0.04$), and health ($p=0.001$) domains. Additionally, patients traveling greater than 65 miles had significantly higher depressive symptoms reported on the PHQ-2 ($p=0.02$).

Implications: Rurality and distance-to-treatment are independently associated with different types of psychosocial concerns. Distance-to-treatment may be associated with concerns in more domains than rurality. We recommend that providers consider both rurality and distance-to-treatment as potential risk factors for psychosocial distress when designing policies and services that address the additional needs faced by patients from rural and distant areas.

ENHANCING CARE AND IMPROVING HEALTH ACROSS THE CANCER CARE TRAJECTORY

Usability Evaluation of a Mobile Application for Chemotherapy Care Coordination

*Victoria Ngo
Doctoral Student*

*Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA*

*Jill G. Joseph, PhD, MD
Professor*

*Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA*

*Richard F. Bold, MD
Chief of Surgical Oncology, Professor
UC Davis Comprehensive Cancer Center
University of California, Davis
Sacramento, CA*

*Cynthia G. Matsumoto, MS, RN-BC
Doctoral Student*

*Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA*

*Janice F. Bell, PhD, MPH, MN
Associate Dean of Research, Professor
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA*

*Katherine K. Kim, PhD, MPH, MBA
Assistant Professor
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA*

Aim: To assess the overall usability of a Personal Health Network (PHN) among cancer patients undergoing chemotherapy.

Background: Cancer care coordination addresses the fragmented and inefficient care of individuals with complex care needs. The complexity of coordination can be aided with the introduction of technology. For this study, the “personal health network” (PHN)—an application with a personalized social network built around a patient for collaboration with clinicians, care team members, caregivers, and others designated by the patient, to enable patient-centered health and healthcare activities—was utilized in a two-arm, randomized, pragmatic trial (n=60) to assess feasibility of implementing nurse care coordination with the PHN technology.

Methods: Summative interviews to understand usability and effectiveness of the application were conducted for the participants who were randomized in the intervention arm and completed care coordination. The interviews were recorded and transcribed verbatim. Qualitative analysis was conducted of the interviews. A two-phased thematic analysis method was utilized to first identify the general themes uncovered in the evaluation interviews and then reviewed for themes identified in the context of usability and usefulness of the PHN application. Two independent analysts coded transcripts using an inductive approach. A draft codebook was developed and transcripts were coded using the agreed upon codes, with additional, agreed-upon codes added as needed. The analysts inductively followed principles of first cycle descriptive and evaluation coding. Discrepancies between coders were resolved by a third investigator.

Results: 27 of 30 participants were recruited for the interview. There were 7 themes identified including: the care coordinator as a partner in care, learning while sick, comparison of other technology to make sense of the PHN, communication, learning, usability, and usefulness. Participants reported that care coordination is a valuable benefit for patients undergoing chemotherapy and the use of technology, such as the PHN, can enhance this process by facilitating communication and access to information regarding their illness.

Implications: From the patient perspective, the PHN has potential to support patients undergoing chemotherapy and their caregivers. The key components of usability for technology focused on the coordination of care that we identified can inform future nursing interventions to improve supportive resources.

Funding: McKesson Foundation, Boston University-Center for the Future of Technology in Cancer Care (National Institute of Biomedical Imaging and Bioengineering Award U54EB015403), and the Gordon and Betty Moore Foundation.

ENHANCING CARE AND IMPROVING HEALTH ACROSS THE CANCER CARE TRAJECTORY

Congruently Addressed Symptoms and Future Care Discussions in Advanced Cancer

Karen de Sola-Smith, PhD(c)
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA

Janice Bell RN, MSN, MPH, PhD
Professor and Associate Dean of Research
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA

Joshua Fenton, MD, MPH
Professor, Department of Family
And Community Medicine
University of California, Davis
Sacramento, CA

Purposes/Aims: To present findings from an analysis of patient-reported discussion topics between patient and oncologist. Based on evidence in specialty palliative care literature that symptom support is a bridge to discussions of prognosis, palliative care, and end of life care, this study aimed to examine associations between symptom support and future care discussions in routine oncology care. Results of this investigation will inform clinical care and intervention design aimed at improving timing and delivery of essential future care discussions for patients with advanced cancer.

Rationale/Background: Discussions between oncologist and patients with advanced cancer concerning end of life care preferences, palliative care, and prognosis are often difficult, delayed, or insufficiently addressed. Interventions focusing on communication-skills training for physicians and patients have shown inconsistent results. Studies within specialty palliative care have shown that symptom support is critical to building the rapport and trust that underlie effective future care discussions. Examining the relationship between symptom support and future care discussions in routine oncology settings can inform interventions to improve timely care planning for advanced cancer patients.

Methods: We conducted a secondary analysis of data collected in the VOICE study. Patients with advanced cancer (n=216) completed measures of symptoms (e.g., pain, nausea, emotional concerns), and an inventory of topics discussed with oncologists over the prior 3 months. Data were collected at quarterly intervals for up to 48 months, resulting in 1,195 paired reports of patients' symptoms and discussions with oncologists. We constructed a multinomial predictor variable with four discrete categories: congruence (symptom reported/discussed), unaddressed concern (symptom reported/not discussed), surveillance (symptom not reported/discussed), and no supportive care concern (symptom not reported/not discussed). We estimated effects on patient report of discussions of future care topics (prognosis, palliative care, and end of life care) using multilevel logistic regression. We also include a patient-reported measure of therapeutic alliance with the physician, and physician self-reported skills with end of life care communication as covariates. Associations with the following demographic characteristics were also assessed: Age, Gender, Race/Ethnicity, Breast (versus other cancer type), Marital Status, and Income.

Results: Odds of discussions of end of life care and palliative care were higher among patients with congruently addressed versus unaddressed emotional concerns (OR 6.5, $p<.01$, OR 3.5, $p<0.01$) and pain (OR 19.0, $p<0.01$, OR 3.3, $p<0.01$). Discussions of prognosis were more likely among patients with congruently addressed emotional concerns (OR 2.5, $p<0.01$), and nausea (OR 2.5, $p=0.02$), as compared to patients whose emotional concerns and nausea were unaddressed. Longitudinally, time in study was associated lower odds of prognostic discussions (OR 0.94, $p<0.01$), but did not significantly predict discussions of end of life care or palliative care.

Implications: Our results suggest that congruently addressed symptoms, particularly emotional concerns, are significant predictors of future care communication in advanced cancer. No known prior study has investigated the relationship between symptom support and future care planning in routine oncology, and these results fill an important gap in our understanding of critically important patient-physician communication, suggesting symptom support discussions as intervention targets to promote discussions of difficult topics.

ENHANCING CARE AND IMPROVING HEALTH ACROSS THE CANCER CARE TRAJECTORY

Quality of Survivorship Care Communication among Older Adult Cancer Survivors in the US

Robin L. Whitney, PhD, RN

*Research Director, Hillblom Center on Aging
UCSF Fresno Medical Education Program, Fresno, CA*

Background: The population of older adult (OA) cancer survivors in the U.S. is growing rapidly, with two-thirds of cancer survivors projected to be age ≥ 65 years by 2020. Many in this growing population will have complex care needs across the survivorship trajectory. For example, around half of all OAs in the U.S. have two or more chronic diseases, increasing their risk of experiencing adverse effects and toxicities during cancer treatment. In turn, late and long-term effects of treatment can exacerbate pre-existing conditions and place OA cancer survivors at higher risk of frailty, functional impairment, and other aging-related problems. Despite their unique risks and care needs, OAs have been underrepresented in all phases of oncology research, from active treatment through survivorship. Studies are needed that address this gap by examining quality of care experienced by OA cancer survivors and identifying unmet needs.

Purpose: To examine quality of survivorship care communication experienced by OA cancer survivors in a nationally representative sample.

Methods: We obtained data from the 2016 Medical Expenditure Panel Survey (MEPS), a cross-sectional, nationally representative survey. Individuals were included if they completed the cancer self-administered questionnaire, a supplemental questionnaire administered to all respondents identified as having a history of cancer ($n= 1,236$). We excluded individuals if they were younger than age 65, had received cancer treatment in the last year, or had a history of only non-melanoma skin cancer. We examined four self-reported survivorship care communication outcomes, including whether a care provider had discussed: 1) a summary of cancer treatments received; 2) lifestyle recommendations; 3) late and long-term effects; and 4) follow-up care needs. For each outcome we considered survivorship care communication high-quality if a care provider discussed it in detail (versus briefly or not at all). We compared outcomes among OA survivors age 65-74 and those age ≥ 75 . Logistic regression models were used to examine predictors of experiencing high-quality communication. Survey weights were applied in all analyses to account for the complex sampling design.

Results: Among 462 OA survivors, only 42% of those age 65-74 and 28% of those age ≥ 75 reported high-quality communication for treatment summary or lifestyle recommendations. High-quality communication about late and long-term effects was reported by 42% of survivors age 65-74 and 37% of survivors age ≥ 75 . High-quality communication about follow-up care needs was reported by 65% of survivors age 64-75 and 55% of survivors age ≥ 75 . In logistic regression models, age ≥ 75 was associated with significantly lower odds of high-quality communication for treatment summary (OR 0.5; 95% CI 0.3-0.8); lifestyle recommendations (OR 0.5; 95% CI 0.3-0.8); and follow-up care (OR 0.6; 95% CI 0.4-0.9), but not late and long-term effects. Having breast cancer was associated with significantly higher odds of high-quality communication for all communication outcomes compared to other cancers.

Implications: Despite having complex health needs, most OA cancer survivors do not experience high-quality survivorship care communication. Further research and clinical attention is needed to improve quality of survivorship care for older adults, particularly among those age ≥ 75 .

Abstracts of Symposium Presentations

**NURSING WORKFORCE DIVERSITY IN THE
WEST: A PRIORITY FOR WIN?**

NURSING WORKFORCE DIVERSITY IN THE WEST: A PRIORITY FOR WIN?

Overview: Nursing Workforce Diversity in the West: How Are We Doing?

*Joanne Noone, PhD, RN, ANEF
Professor and Campus Associate Dean
Oregon Health & Science University
School of Nursing
Ashland, OR*

Purpose/Aims: This symposium describes the current state of nursing workforce diversity in the Western states and some promising practices to engage WIN members to determine if nursing workforce diversity is a priority focus area for WIN.

Rationale/Background: The Western Institute of Nursing's 2017 State of the Science speakers in their follow-up article (Young, Bakewell-Sachs, & Sarna, 2017) referenced the Institute of Medicine report *Future of Nursing: Leading Change, Advancing Health* (2010) and recommendations for needed changes in nursing education, practice, and research. One of the recommendations of the IOM Report was to make workforce diversity a priority in nursing to provide culturally competent care and contribute to resolution of health inequities. While minority nurses are increasing in the nursing workforce, the minority distribution of nurses in the United States is not representative of the population, especially for nurses of Latinx, Native American or Alaskan Native background in the Western states. The Campaign for Action (2018) monitors progress of the IOM recommendations and recently provided dashboard data comparing the racial and ethnic composition of the general population with pre-licensure nursing graduates from 2011 and 2016. The Western states have the largest representation of Latinx nurses and although they have made progress towards increasing workforce diversity, they continue to have the largest gaps in Latinx nurse presentation in the workforce (Xue & Brewer, 2014).

Description of Best Practices: This symposium presents four innovative programs in Western states to improve nursing workforce diversity. The first presentation discusses reducing barriers to undergraduate and graduate education for underrepresented students in the dominant cultures in Arizona: Native American and Latinx through pass-through admissions, Summer Intensive programs, a writing skills improvement program, mentoring, and the student self-care and resiliency program. The second presentation describes a program for undergraduate and graduate students who reflect the underserved communities in which graduates practice in California and describes the promising practice of a nurse coach who makes rounds to classes to provide support for students and structured seminars on time management and study skills. The third paper presents a collaborative of a state nursing workforce center and six rural and urban associate degree and baccalaureate programs in Colorado and focuses on the promising practice of a mentoring institute to prepare nursing mentors for 40 nursing students from these 6 schools of nursing. The fourth paper presents promising practices to implement a multi-campus undergraduate initiative to improve workforce diversity and discusses mentorship, career planning, case management and deployment of holistic admission strategies through partner schools throughout Oregon.

Outcomes Achieved: The papers in the symposium contribute to knowledge development related to improving nursing workforce diversity for other colleges, universities, and states to consider.

Conclusions: Young, Bakewell-Sachs, and Sarna (2017) in their recommendations for future action included setting top priorities for education, practice and research and developing a policy-focused effort within the WIN states, including workforce issues. Improving nursing workforce diversity is a priority issue which could lead, through collective impact, to resolving health inequities within our Western states.

NURSING WORKFORCE DIVERSITY IN THE WEST: A PRIORITY FOR WIN?

The Arizona Nursing Inclusive Excellence Program: Diversifying Our Nursing Workforce

Mary Koithan, PhD, CNS-BC, FAAN, Associate Dean and Anne Furrow Professor

Natalie Pool, PhD, RN, Clinical Assistant Professor

Linda Perez, MAdmin, RNC, Senior Lecturer

Michelle Kahn-John, PMHNP-BC, GNP, Assistant Professor

Cheri Lacasse, PhD, RN, AOCNS, Clinical Professor

University of Arizona College of Nursing, Tucson, AZ

Purpose/Aims: This presentation will describe the essential elements of the University of Arizona (UA) data-driven and evidence-informed programming, including our holistic admissions initiative implemented across all degree programs (BSN, Master's Entry, RN-MS, DNP, PhD); the 2-year pre-nursing/Voyager program; the 2-year BSN/Vanguard program; and our doctoral (DNP/PhD)/Pinnacle program to improve nursing workforce diversity.

Rationale/Background: Arizona's has an increasingly diverse population; 30.7% Latinx and 5.3% American Indian with 23 federally recognized tribal entities. In addition, Arizona has a large rural and border population. Our high school graduates are considered some of the most disadvantaged in the United States; Arizona is ranked 46 out of 50 states in per student funding (US Census Bureau, 2018). Our needs are particularly striking in healthcare; every Arizona County was identified as having significant primary care and mental health MUA/Ps and HPSAs with a workforce that did not adequately reflect the demographics of Arizona's population. The UA College of Nursing's (UA CON) student demographics suggest that we are contributing to this concern rather than creating solutions. In 2015, only 31.2% of our admitted pre-nursing students were from minority populations and less than half of these students were retained through graduation.

Description of Best Practices: In 2017, the Arizona Nursing Inclusive Excellence (ANIE) program, funded by HRSA through its Nursing Workforce Diversity grant program, was begun with a primary goal to increase the number of students admitted to, retained in, and graduated from backgrounds considered to be under-advantaged and under-represented in nursing and particularly individuals with substantial experiences related to the dominant cultures of the state of Arizona, i.e., American Indian, Latinx, rural, and first generation so that our graduates better match the cultural demographics of Arizona by effectively addressing the barriers to undergraduate and graduate education.

Outcomes Achieved: We will highlight program elements that are particularly innovative, including our Voyager pass-through admissions process, three Summer Intensive programs that are specifically designed to reduce educational barriers and improve professional outcomes in the various student cohorts, the writing skills improvement program, the ANIE peer/professional mentoring program, and the student self-care and resiliency program. Initial outcomes of the various elements as well as lessons learned will be discussed.

Conclusions: Similar to many WIN member constituents, as the state's land grant institution, UA has a mission to provide education that addresses the needs of our state's population and to develop a workforce that is reflective of our demographic. ANIE is one step to creating an environment for faculty, students, and staff that is inclusive and high performing.

Funding: This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number D19HP30859 and title, Nursing Workforce Diversity: The Arizona Nursing Inclusive Excellence Initiative for \$1,999,908.00. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.

NURSING WORKFORCE DIVERSITY IN THE WEST: A PRIORITY FOR WIN?

Enhancing Student Success through the Embrace Project

*Stephanie Vaughn, PhD, RN, CRRN, FAHA
Professor/Director
School of Nursing
California State University, Fullerton
Fullerton, CA*

Purpose/Aim: The aim of this paper is to elucidate the Nurse Coach role, which is one of the *support strategies* developed for our nursing students through the Workforce Diversity Grant (HRSA), entitled, Enrichment Markers of Better Relationships, Academics, & Cultural Enhancement (EMBRACE). This project addresses social determinants that create student barriers to success and optimize the educational climate and culture of the SON. By evaluating existing resources and creating new educational and *support strategies*, this project produces a culturally competent professional nursing work force that values diversity.

Rationale/Background: Multiple demands of nursing education, including clinical rotations, rigorous coursework, in addition to personal demands can contribute to stress, anxiety, and life balance issues in nursing students. Through the EMBRACE grant academic and psychosocial resources were developed to assist students in a Southern California university to persist in school and be successful in their journey to become registered professional nurses prepared to work with diverse vulnerable populations. Studies show that intrinsic factors, such as self-efficacy, resilience, and emotional intelligence can foster psychological well-being along with external factors, such as support from family and friends. According to the literature, a nurse coach support can mediate stress and anxiety through strategies (i.e. mindfulness) to assist the student with life imbalance. High risk students, such as those with less family and peer support and/or those in fear of failing, may present with higher stress and the inability to cope.

Undertaking/Best Practice/Approach/Methods/Process: The nurse coach is a doctoral prepared faculty member with a background in mental health and health/wellness who makes “rounds” to meet with students in small groups or individually to develop creative ways to achieve “balance” while in school. She also helps students cope with tough client/patient situations in clinical rotations, assists the students in navigating the university/community resources re: financial concerns, food insecurity, family situations, and provides direction to faculty to deal with student issues. She offers consultation regarding time and stress management techniques, including mindfulness, meditation and exercise. If students are in need of formal counseling services, the nurse coach accompanies the student to the Counseling Center.

Outcomes Achieved: Initial findings in 2017 following implementation of the aforementioned new support role, along with other resources, and educational strategies, demonstrate short term effects on both student perceptions and persistence in the SON. The satisfaction with the nurse coach satisfaction is rated high (4.71/5 Likert). In fall 2018 (7 weeks), the Nurse Coach has already had multiple student encounters (n – 49). To foster continued improvement, modifications in the support services/resources and educational approaches will be implemented as indicated.

Conclusions: Implementation of culturally-appropriate educational and support resources, including the nurse coach role, positively impacts the students’ coping strategies and resilience in response to the demands of nursing school.

Funding: HRSA Workforce Diversity Grant #D19HP30843

NURSING WORKFORCE DIVERSITY IN THE WEST: A PRIORITY FOR WIN?

Increase Nursing Workforce Diversity: Mentor for Success

*Amanda D. Quintana, DNP, RN, FNP
Project Director; Coach-CTI
Colorado Center for Nursing Excellence
Denver, CO*

Purpose/Aims: The purpose of this presentation is to share best practices and outcomes from the robust mentoring program for ethnically and racially diverse nursing students created by the Colorado Center for Nursing Excellence (the Center). Pearls gained and lessons learned will be discussed.

Rationale/Background: After months of literature review, focus groups, key informants, and counsel from diversity advisory committee members, the Center launched a pilot mentoring program for diverse nursing students in 2014. Its main focus, at that time, was concentrated on teaching mentors skills they would need to be effective. It has evolved to additionally focus intently on helping mentees navigate both non-academic and academic challenges faced in nursing school. The program has shown great success and is currently on its 5th Cohort. Since 2014, the Center has trained a total of 116 mentors and 153 diverse nursing students have been effectively mentored to success.

Description of Best Practices (Approach, Methods, Process): The Center found that a year-long formally structured mentoring strategy is most effective. Diverse clinical nurses participate in an intensive 2-day Mentor Training Institute to learn skills for effective mentoring. Students (mentees) attend a 1-day Academic Success Course to orient them to the program and provide them with fundamental tools to navigate through the rigor of nursing school. Commitment contracts and mentoring agreements keep all stakeholders accountable while ongoing structured group coaching of mentors help keep mentors engaged and motivated. Mentor-mentee matching process is strategic and based on best practice recommendations. Program expectations are made clear to all involved. Peer networking is established. Internal and external resources are utilized to address both academic and non-academic challenges and a comprehensive assessment of the program is performed annually to continually make improvements.

Outcomes Achieved: The most notable outcome, to date, is that 100 % of all students who have graduated and have participated in this program have passed their NCLEX-RN® exam. Student attrition in the program has decreased from 20% to 9% over three years. Seventy-one percent (71%) of the students actively participate in their peer social networking platform to support one another. Thirty-two percent (32%) of the students have utilized resources to address social determinants of education which was instrumental to their success. One-third of mentors trained return to mentor for consecutive years. Finally, as a direct result of this program, the Center has also established several new partners over the years, such as the Center to Champion Nursing in America - RWJF and National League of Nursing.

Conclusions (Implications for Practice and Recommendations for Future): Mentoring is only one avenue to increase nursing diversity. Many other opportunities are within reach. This work has sparked a deeper awareness around the need to diversify the nursing workforce in CO and nationally. Holistic review and admissions along with intercultural training of faculty and staff are other areas of focus for the Center. The Center is also exploring pipeline recruitment strategies of middle and high school diverse students. While the patient/nurse diversity gap is narrowing one project at a time, much needed awareness is heightened.

Funding: This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number D19HP30841, Nursing Workforce Diversity for grant amount \$499,322. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS, or the U.S. Government.

NURSING WORKFORCE DIVERSITY IN THE WEST: A PRIORITY FOR WIN?

HealthE STEPS 2.0: Promising Practices to Enhance Diversity in Nursing

*Rana Najjar, PhD, RN, CPNP
Assistant Professor, School of Nursing
Oregon Health & Science University
Monmouth, OR*

*Joanne Noone, PhD, RN, CNE, ANEF
Professor, School of Nursing
Oregon Health & Science University
Ashland, OR*

*Peggy Wros, PhD, RN
Senior Associate Dean for Student Affairs
& Diversity, School of Nursing
Oregon Health & Science University
Portland, OR*

Aims: 1. To implement a multi-campus undergraduate initiative with promising practices. 2. To discuss mentorship, career planning, case management, and holistic admission strategies.

Background: There has been a call to increase workforce diversity in nursing to meet the demands of a diverse population and address health equity (IOM, 2010). Research has indicated Oregon is experiencing a gap in diversity with almost 12% of the population Latinx compared to 2.5% of RNs and 3.1% of NPs. Improving nursing workforce diversity requires schools of nursing to expand their efforts to enroll, retain, and graduate nurses from underrepresented populations. One such program is The *Advancing Health Equity through Student Empowerment & Professional Success (HealthE STEPS) 2.0 Statewide Program*. HealthE STEPS is a multi-campus undergraduate initiative designed to develop and implement promising practices and strategies such as case management, mentorship, career planning, and utilization of a holistic admission process to improve nursing workforce diversity across the state of Oregon.

Methods: Several strategies were implemented to maximize retention which include case management and mentorship. Diversity Coordinators (program staff) with the help of the faculty coordinators case manage students to provide early intervention and referral to academic support services. The mentorship program utilizes an evidence-based model in which each student is assigned a mentor. Students meet with their mentor on a monthly basis and they support students in academic socialization and career planning. Students also build a 5 year career plan with their mentors. Other strategies to help with career planning include the Transitions to Practice Workshop and Graduate School Exploration Workshop. Implementation of the holistic admission process includes assessing the applicant's experiences with diversity and commitment to social justice. Currently, the admission process is being expanded to also assess the applicant's attributes and potential contribution to the profession.

Outcomes Achieved: Data collected since implementation of the program has shown improvement in several different areas for the SON, university campus sites, and trainees. HealthE STEPS 2.0 Statewide Program expanded from two campuses to five campuses by June, 2018. For the 2017 – 18 academic year, we had 38 disadvantaged students on 2 urban and 3 rural/frontier campuses statewide to participate as undergraduate trainees. For the 2018 – 19 year, we have 38 students for the undergraduate program and 4 students for the graduate program participating in the HealthE STEPS program. Two campuses have integrated the Transitions to Nursing into their curriculum. The Graduate School Exploration Workshop had 12 underrepresented students from all campuses in attendance in June of 2018. The aggregate undergraduate incoming class was 21% underrepresented minority status for all campuses in 2017. Underrepresented minority student rates in the BS pre-licensure programs increased from 14% at baseline in 2015 to 16% in 2016 and 18% in 2017.

Conclusion: HealthE STEPS is a comprehensive, individualized approach to nursing education, grounded in the social determinants of health, focusing interventions on key barriers to recruitment and retention. Expansion of HealthE STEPS has occurred statewide and includes rural and frontier campuses implementing promising practices and strategies to increase nursing workforce diversity.

Funding: Health Resources and Services Administration Nursing Workforce Diversity Program Grant Number D19HP30850.

Abstracts of Symposium Presentations

**REPRODUCTIVE HEALTH OF WOMEN
WITH DISABILITIES:
NEW RESULTS ON AN UNDERSTUDIED GROUP**

REPRODUCTIVE HEALTH OF WOMEN WITH DISABILITIES: NEW RESULTS ON AN UNDERSTUDIED GROUP

Overview: Perspectives on Reproductive Health of Women with Disabilities

Lauren Clark, RN, PhD
Professor
College of Nursing
University of Utah
Salt Lake City, UT

Sara Simonsen, CNM, PhD
Associate Professor
Endowed Chair
College of Nursing
University of Utah
Salt Lake City, UT

Purpose: This symposium provides research-based results elaborating on the reproductive health needs, experiences, and desires of women with cognitive and physical disability. Using qualitative and quantitative methods to study women's reproductive lives, we describe their reproductive health experiences, social resources, and healthcare options related to reproductive care.

Background: People with disabilities experience health disparities in several areas, a topic *Healthy People 2020* addresses directly. National goals seek to promote the health of people with disabilities by recognizing environmental barriers to health, addressing lack of access to resources, minimizing provider mis-information and bias, and drawing attention to the need for improvement in areas of known disparity. These forward-looking goals are juxtaposed against an historical backdrop of discrimination toward women with disability, particularly in the area of reproductive choice, options, and technologies. Social, ethical, and health systems considerations figure prominently in women's right to self-determination in reproductive health.

Approach: Women's reproductive health is at the forefront of contemporary disability and health research. The complementary array of papers included in the symposium begins with an introduction to women's reproductive health goals, desires, and needs by drawing from survey results provided by a nation-wide sample of women who self-identify as having a physical, cognitive, or intellectual disability. The second paper deepens the focus on one aspect of reproductive health: miscarriage and receipt of miscarriage prevention services. This study was based on a separate national sample of women with disabilities and compares their experiences to women without disabilities. The next research paper describes social support reported by women with disability and compares qualitative and quantitative social support measurement options in a community-based sample of women with disability. The concluding paper relies on women's own discourse about pregnancy and early motherhood, drawing on the personal blog posts of women with traumatic brain injury, spinal cord injury, autism, and spina bifida. Each paper in the symposium offers new evidence about the reproductive health experiences and needs of women with disability through quantitative or qualitative methods, and what questions remain about the embodied experiences of disability and contraception, miscarriage, pregnancy, and new motherhood. The symposium papers challenge assumptions that women with disabilities lack the desire or ability to experience all facets of reproduction by offering data about women's expectations and experiences, as well as the support they experience in families, communities, and clinical settings.

Conclusions: The symposium, taken as a whole, outlines research-based data and methods to enrich conceptualization and study of women's reproductive health in the future.

REPRODUCTIVE HEALTH OF WOMEN WITH DISABILITIES: NEW RESULTS ON AN UNDERSTUDIED GROUP

Pregnancy History, Intention, and Support among Women with Disability

Sara Simonsen, CNM, PhD, Associate Professor, Endowed Chair

Susan Dearden, BS, Research Assistant

Michelle Litchman, PhD, FNP-BC, Assistant Professor

Jia-Wen Guo, RN, PhD, Assistant Professor

Lauren Clark, RN, PhD, Professor

*University of Utah College of Nursing
Salt Lake City, UT*

Purpose: The experiences and needs of reproductive-age women with disability have been recognized as a high-priority research area. This study was designed to describe pregnancy histories and intentions of women with disability and women's perceptions about provider and family support for pregnancy.

Background: Women with disability face unique challenges and barriers to care and are at risk for pregnancy complications. Information is lacking about pregnancy intentions and perceived support in this group.

Methods: An online survey was developed, pilot tested, and refined. Respondents were recruited locally through community events, flyers, and local organizations. National recruitment was done via messages to organizations serving those with disability, and recruitment announcements on Facebook, Twitter, and ResearchMatch. English-speaking women, age 18-40, completed the online survey independently, with assistance from a person of their choosing, or via telephone/skype with study staff. We report survey findings and statistical test results comparing responses from those with (n=65) and without cognitive/intellectual disability (n=116).

Results: A total of 181 eligible women completed the online informed consent process and initiated the survey. Respondents came from 34 U.S. states, had a mean age of 30.2 years, and 85% were non-Hispanic Whites. Most respondents were insured (97%) and nearly all had seen a health care provider in the last year (99%). A third of respondents were married and 79% were sexually active. Women with cognitive/intellectual disability were significantly less likely to be married or sexually active ($p<0.05$). Among sexually active women, 73% reported male partners, 5% female partners, and 23% both male and female partners. No significant differences were noted in pregnancy rates among sexually active women with and without cognitive/intellectual disability. Overall, 35% reported having ever been pregnant. Miscarriage/stillbirth rates (40%) were higher than national rates and women reported abortion histories (25%) similar to national data. Similar proportions of women with and without cognitive/intellectual disability reported wanting to have future children (36%), ambivalence about having future children (26%), and plans for no future children (38%). When asked, "Imagine you just found out you were pregnant. What would you do?" responses were significantly different between those with and without cognitive/intellectual disability ($p<0.01$). A smaller proportion of women with cognitive/intellectual disability would get an abortion (40% vs. 60%), and a larger proportion would have family/adoptive parents raise the child (8% vs. 0%) or be uncertain about what to do (23% vs. 7%). Many women were uncertain about whether a pregnancy would be supported by their healthcare provider (33%) or their family (25%), and 11% felt their healthcare provider or family would *not* support a pregnancy. Women with cognitive/intellectual disability were less likely to report family support for pregnancy ($p<0.05$).

Conclusions: These findings highlight the challenges faced by women with disability. Women's healthcare providers should be sensitive to the pregnancy intentions of their patients with disabilities, particularly those with cognitive/intellectual disability who may feel less supported by family members. Providers in disability settings may wish to update their knowledge of women's reproductive health needs and goals in order to support self-determined choices.

Funding: Provided by the University of Utah College of Nursing Research Committee Burton Fund.

REPRODUCTIVE HEALTH OF WOMEN WITH DISABILITIES: NEW RESULTS ON AN UNDERSTUDIED GROUP

Miscarriage among Women with Disabilities

*Willi Horner-Johnson, PhD, Associate Professor
Mekhala Dissanayake, MPH, Research Programmer
Blair G. Darney, PhD, MPH, Assistant Professor
Aaron B. Caughey, MD, PhD, Professor and Chair*

*Oregon Health & Science University School of Medicine
Portland, OR*

Purpose: Several studies have found that, among women who give birth, women with disabilities are more likely to have adverse outcomes such as preterm births and infants small for gestational age. However, very little is known about outcomes earlier in pregnancy. Addressing this knowledge gap is crucial for informing pre-conception and early pregnancy care of women with disabilities. The purpose of this study was to determine prevalence of miscarriage and receipt of care focused on miscarriage prevention among women with disabilities in a nationally representative sample.

Background: In the general population, an estimated 15-25% of recognized pregnancies end in miscarriages. Common approaches related to preventing miscarriage include diagnostic testing, progesterone supplementation, bedrest, and physical activity restrictions. While the first two may help, the available evidence does not support the latter two. In seeking to reduce healthcare disparities, it is important to understand whether women with disabilities are receiving evidence-based care, and whether the care they receive differs from that received by women without disabilities.

Methods: We conducted a cross-sectional analysis of 2011-2015 National Survey of Family Growth data. Outcomes included odds of having experienced a miscarriage; receipt of any care for preventing miscarriage; and specific type of miscarriage prevention care received. We compared women with disabilities overall and in five subgroups to women with no disabilities. The five subgroups reflected difficulty in: 1) hearing; 2) vision; 3) physical functioning; 4) cognition; and 5) independent living. We conducted bivariate analyses and multivariate logistic regressions adjusting for age, race, education, partner status, insurance, and parity. Our analytic sample included 3,579 women age 15-44 years with a pregnancy in the last five years before their interview.

Results: After covariate adjustment, women with disabilities had significantly elevated odds of miscarriage (OR=1.69, 95% CI=1.24-2.31) and of having received care focused on miscarriage prevention (OR=1.87, 95% CI=1.30-2.68). Odds of miscarriage were elevated for each of the disability subgroups except vision. Odds of receiving miscarriage prevention care were elevated for each subgroup except hearing. Women with vision difficulties had elevated odds of being put on bedrest (OR=2.68, 95% CI=1.06-6.75). Women with physical disabilities had elevated odds of receiving diagnostic testing (OR=3.13, 95% CI=1.10-8.85), and being told to restrict their physical activity (OR=3.70, 95% CI=1.51-9.07).

Conclusions and Implications: In a representative sample of U.S. women, we found significant differences in odds of miscarriage and in receipt of care to prevent miscarriage in women with disabilities compared to those without. Further research is needed on why women with disabilities are more likely to experience miscarriage and specific care recommendations for prevention. The recommendations for bedrest or limiting physical activity received by women with vision and physical disabilities are concerning. There is no evidence that these measures are effective in preventing miscarriage. In fact, limiting physical activity may contribute to muscle wasting and further loss of function for women with disabilities. Our findings suggest adjustments in clinical practice may be needed to ensure that women with and without disabilities are equally likely to receive appropriate evidence-based care in early pregnancy.

Funding: Provided by grant #R21HD081309 from the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development of the National Institutes of Health and grant #K12HS022981 from the Agency for Healthcare Research and Quality.

REPRODUCTIVE HEALTH OF WOMEN WITH DISABILITIES: NEW RESULTS ON AN UNDERSTUDIED GROUP

Social Support of Reproductive-Aged Women with Disability

Lauren Clark, RN, PhD, Professor
Sara Simonsen, CNM, PhD, Associate Professor, Endowed Chair
Susan Dearden, BS, Research Assistant
Jia-Wen Guo, RN, PhD, Assistant Professor
Michelle Litchman, PhD, FNP-BC, Assistant Professor

University of Utah College of Nursing
Salt Lake City, UT

Purpose: We know little about who comprises the health-related social network of pregnant women with disabilities, and less about the ways the social network functions to offer social support for reproductive health choices. This is a critical knowledge gap because more women are entering adulthood with disabilities and becoming pregnant. The purpose of our study was to describe the constellations of people and kinds of social support reported by reproductive-aged women with disabilities.

Background: When faced with important health decisions, pregnant women with disabilities—like most of us—turn to partners, family, and friends and ask, “What should I do?”. We assume those closest to us will help us make an informed and voluntary decision, but that assumption is suspect. Women with disabilities report social stigma about their reproductive choices and have smaller social circles than women without disabilities.

Methods: As part of a larger online national survey, a convenience sample of women with disabilities completed the RAND MOS measure of social support, a 19-item Likert-based questionnaire comprised of 4 subscales and a single item. To elicit additional data from women with intellectual disability, about whom less is known, the research team piloted two supplemental, narrative-based methods to explore the potential to enrich survey results. We considered an activity-based social network elicitation method and a standardized computer-based name generator.

Results: A total of 179 women (18-40 y.o. mean 30.2 y.o.) completed the MOS social support scale: 112 women with physical disability, 35 with intellectual or cognitive disability, and 32 with both physical and cognitive disability. Those with physical disability were more often married than women in the other groups. The MOS scale demonstrated reliability in this sample similar to previously reported reliability (Cronbach’s alpha = .96 and .97 respectively). Women’s response patterns by subscale paralleled population-based MOS data, with *affection support* ranking highest among social support subscales, based on items about having someone who shows you love, someone to make you feel wanted, and someone to hug you. Women with intellectual/cognitive disability reported a slightly lower mean on the *positive social interaction* subscale than women in the other disability groups, based on questions about having someone to have a good time with, someone to get together with for relaxation, and someone to do something enjoyable with. These differences were not significant. The activity-based social network assessment yielded greater descriptive detail, took approximately 20 minutes to complete, and highlighted close but small networks of support women reported by women with intellectual disability. The computer-aided name generator introduced both technical and ethical challenges, but offered advantages for remote participants. Balancing structural assessments of the social network with functional assessments of social support provides a more complete understanding of the social context in reproductive health.

Conclusions: Informed, voluntary reproductive decision-making among women with disability may be advanced through understanding the social context of reproductive health decisions and availability of support.

Funding: Provided by the University of Utah College of Nursing Research Committee Burton Fund.

REPRODUCTIVE HEALTH OF WOMEN WITH DISABILITIES: NEW RESULTS ON AN UNDERSTUDIED GROUP

What Women with Disabilities Write in Blogs about Pregnancy and Early Motherhood

MJ Tran, MBA, BSN, Research Assistant, PhD Student

Susan Dearden, Research Assistant, MPH Student

Jia-Wen Guo, PhD, RN, Assistant Professor

Sara Simonsen, PhD, CNM, MSPH, Associate Professor

Lauren Clark, PhD, RN, Professor

Michelle Litchman, PhD, FNP-BC, FAANP, Assistant Professor

University of Utah College of Nursing

Salt Lake City, UT

Purpose: The purpose of this study was: 1) to examine the information being shared in blogs by women with four types of disability: spinal cord injury, traumatic brain injury, spina bifida, and autism about reproductive health, disability, healthcare, pregnancy, and motherhood; and 2) to classify the content of reproductive health experiences addressed by bloggers to better understand what they viewed as vital.

Background: More than 1 in 10 reproductive age women identify as having some type of disability. Women with disability have similar desires to become pregnant and experience motherhood as women without disability. Women with disabilities, however, face greater stigma and stereotyping, additional risk factors, and may be less likely to receive adequate reproductive health care compared to their peers without disability. Women, including those with disabilities, seek and share information about reproductive care by means of social media. Blogs are considered one form of social media that offers a forum for women with disabilities to both share and obtain peer-to-peer information, experiences, and support. Even so, little is known about the content of reproductive health topics, including pregnancy and early motherhood, featured in personal blogs authored by women with disabilities.

Methods: Personal blogs were identified by searching Google for a variety of reproductive health and disability keywords indexing specific disabilities of interest in this study: spinal cord injury, traumatic brain injury, spina bifida and autism. The first 10 pages of each database search in Google, based on the relevance of the search terms, were reviewed and all blogs in these pages were included. Blogs were included if they were written in English, published between 2013 – 2017, and written by the woman herself or her care partner (i.e., parent, spouse), and the blog posts described her experiences related to disability and reproductive health. There were no limitations on blogger country of origin, forums were omitted. Each blog was independently reviewed for inclusion by at least two independent reviewers. NVIVO was used to analyze both the blogs and subsequent comments posted by readers.

Results: 125 blogs met inclusion criteria. None of the blogs in the final sample were written by a care partner; all were written by women themselves. Qualitative descriptive analysis resulted in four themes: 1) (In)Accessible motherhood, meaning women with disabilities face different challenges and barriers when considering or preparing for pregnancy. Adaptations were necessary to make motherhood more accessible; 2) (Un)Supportive others, describing the positive support received from family and friends and mixed support from healthcare providers; 3) Different, but not different, particularly regarding the similarities in pregnancy and motherhood faced by women with disability with some differing perspectives or difference; and 4) Society questioning motherhood, specifically the misconceptions or misunderstandings from others questioning whether or not a woman with a disability should conceive, deliver, or care for children.

Implications for Practice: The reproductive health challenges faced by women with disabilities and the adaptations they made to navigate pregnancy and early motherhood provide insights into the need for nursing care that recognizes and overcomes ableist limitations.

**SLEEP DISTURBANCE IN CHRONIC HEALTH
CONDITIONS**

SLEEP DISTURBANCE IN CHRONIC HEALTH CONDITIONS

Overview: Sleep Disturbance in Chronic Health Conditions

*Teresa M. Ward, RN, PhD
Interim Chair & Professor, Alumni Endowed Professor in Nursing
Co-Director, Center for Innovation in Sleep Self-Management
Psychosocial & Community Health, School of Nursing
University of Washington
Seattle, WA*

Sleep disturbances including inadequate amount of and/or poor quality sleep is ubiquitous among adults living with a chronic health condition. Left untreated, sleep disturbances lead to significant alterations in daytime function and increase risk for adverse health outcomes. Several national organizations published recommendations that adults 18 to 60 years should obtain at least 7 hours of sleep nightly. However, 1 in 3 adults report sleeping < 7 hours nightly and 10% report not getting enough sleep every day in the past month. Inadequate amounts of sleep or poor quality sleep coincides with the rise in obesity, diabetes, and mental health challenges.

Sleep assessments are not routinely conducted in primary and specialty care settings, and poor sleep is often attributed to the underlying chronic health condition. Prior studies show the longitudinal associations between sleep disturbances, depression, fatigue, and daytime function. However, the etiological relationship between these problems remains unclear. Sleep disturbances are modifiable. Thus, understanding the etiological relationship could help determine whether the onset of one is a risk-factor for the onset of the others, and inform public health campaigns and clinical interventions for disturbed sleep. Routine assessments of sleep in those living with a chronic health condition is a critical component to better understand how nurses can intervene and for the development of interventions.

In this symposium we describe the results from a series of studies that examined sleep disturbances and its associations with health outcomes in adult populations living with chronic health condition. The first study describes the relationship between stroke symptoms and sleep-related impairment in community dwelling stroke survivors. The second study describes insomnia and potential biomarkers that could distinguish poor sleep from depressive symptoms in adults living with HIV infection. The third study describes the bidirectional relationship between post-traumatic stress disorder and obstructive sleep apnea in Veterans. The final study describes sleep disturbances in parents caring for young children with a chronic condition. Implications for future research and for clinical practice will be highlighted for each study.

Objectives: Following this symposium, the learner will be able to

1. Describe the extent of sleep disturbances in chronic health conditions, and the impact of poor sleep on mental health and daytime function.
2. Understand the importance of obtaining subjective and objective reports about sleep in adults living with a chronic health condition and in parents caring for children with chronic health conditions.
3. Appreciate the need for routine sleep assessments in adults with chronic health conditions.

Funding: Research was supported by NIH, National Institute of Nursing Research, P30 NR011400, Center for Research in the Management of Sleep Disturbances, University of Washington, School of Nursing.

SLEEP DISTURBANCE IN CHRONIC HEALTH CONDITIONS

Bidirectional Relationship between PTSD and OSA in Veterans

Kris Weymann, PhD, RN

*Assistant Clinical Professor, VA Portland Nurse Scientist
Oregon Health & Science University School of Nursing
VA Portland Health Care System, Portland, OR
weymannk@ohsu.edu*

Yvonne Barsalou, RN

*Registered Nurse
Oregon Health & Science University
Portland, OR*

Miranda Lim, MD, PhD

*Staff Physician Sleep Disorders
& Assistant Professor
Oregon Health & Science University &
Portland VA-Sleep Disorders Clinic
Portland, OR*

Aims: The primary aim of this pragmatic study was to determine the rate of obstructive sleep apnea (OSA) and factors associated with the apnea-hypopnea index (AHI) in a prospective study of Veterans with and without traumatic brain injury (TBI) and post-traumatic stress disorder (PTSD). Since OSA disrupts sleep and increases sympathetic activity, a secondary aim was to determine if newly diagnosed OSA is associated with symptoms of PTSD.

Background: Disrupted sleep, a common problem among Veterans, is in part due to higher rates of OSA in the Veteran population associated with male gender, increased age and body mass. In addition, exposure to trauma, including TBI and PTSD may increase the risk of OSA. OSA is characterized by insufficient breathing from airway obstruction during sleep. To maintain oxygenation, the sympathetic nervous system is activated during apneic/hypopneic events, resulting in arousal and restored breathing. Positive airway pressure (PAP) therapy for OSA improves health outcomes. However, insomnia, depression, and PTSD may interfere with the use of PAP therapy and decrease the benefits of this treatment.

Methods: Veterans without a previous diagnosis of OSA were recruited from the VA Sleep Clinic at their overnight polysomnography (PSG). Self-report of symptoms at baseline and 3 months was collected using validated surveys for insomnia, daytime sleepiness, depression, and symptoms of PTSD. Statistical differences among groups were measured with one-way ANOVA with correction for multiple comparisons. Regression analyses were performed using Stata 14.0.

Results: Veterans with and without TBI and PTSD had similar rates of OSA. Among the 664 participants, 85.4% were diagnosed with OSA. In multiple regression controlling for age, BMI, and sex, OSA was associated with worse symptoms of PTSD. Those with PTSD+OSA had significantly worse symptoms of depression, daytime sleepiness, and insomnia than those with OSA alone. In addition, symptoms of PTSD were significantly correlated with AHI, depression symptoms, and insomnia. Among those diagnosed with OSA and prescribed PAP therapy, those with some use of PAP therapy in the first 3 months had significant improvement in daytime sleepiness, depression symptoms, and insomnia. This improvement was most evident in those with neither TBI nor PTSD. In the group with neither TBI nor PTSD, only 12.2% of PAP users had clinically-relevant insomnia at 3 months, a significant decrease from 41.5% at baseline. However, among those with PTSD who had some use of PAP therapy, there was not a significant decrease in the percentage with insomnia at 3 months.

Implications: Nurses have opportunities to integrate sleep as part of assessment and management of health. Those with PTSD are at increased risk of disrupted sleep from apneic/hypopneic events. OSA is associated with increased symptoms of PTSD, resulting in a bidirectional detrimental interaction. Younger Veterans with PTSD may have lower age and BMI protecting them from OSA. Targeted interventions to control BMI and treat PTSD may be essential to improve sleep health in those with PTSD. In those with PTSD and OSA, additional support of PAP therapy is warranted.

Funding: Funding to K.W. as a nursing postdoctoral fellow was provided by the Veterans Administration Office of Academic Affiliations. Research funding to K.W. provided by Sigma Theta Tau Beta Psi. Funding to Y.B. as a summer intern was provided by the Portland VA Research Foundation and OHSU Occupational Health.

SLEEP DISTURBANCE IN CHRONIC HEALTH CONDITIONS

Distinguishing Insomnia from Depression in Adults with HIV: Unique Biomarkers

Kathryn A. Lee, PhD, RN, CBSM
Professor Emerita
University of California, San Francisco
School of Nursing
San Francisco, CA

Caryl Gay, PhD
Research Associate
University of California, San Francisco
School of Nursing
San Francisco, CA

Annors Lerdal, PhD, RN
Professor
University of Oslo
Dept. of Nursing, Institute of Health
and Society, Faculty of Medicine
Oslo, Norway

Purpose: The purpose of this study was to describe insomnia and potential biomarkers that could distinguish poor sleep from depressive symptoms in adults living with HIV infection.

Background: Research suggests that HIV-infected adults are at high risk for both chronic insomnia and depression due to lifestyle factors, low income, lack of social support, and stigma. However, distinguishing between these co-morbid conditions is often difficult, and most self-report measures include aspects of both among their items.

Methods: In this descriptive study of symptoms in adults living with HIV, 350 participants consented and enrolled, and 347 completed questionnaires that included sleep disturbance (Pittsburgh Sleep Quality Index: PSQI) and depressive symptoms (Center for Epidemiologic Studies Depression Scale: CES-D). Participants wore a wrist actigraph for 72 hours to obtain objective sleep and circadian activity data, and provided a fasting blood sample for plasma biomarkers. Eligible participants were at least 18 years old, had a documented diagnosis of HIV infection, and were English literate. Insomnia was based on an established PSQI cutpoint score >5 . High risk for depression was based on an established CES-D cutpoint score ≥ 16 . Chi-square (χ^2) and one-way ANOVAs or Kruskal-Wallis nonparametric tests were used for group comparisons. Statistical significance was set at $p \leq 0.05$.

Results: Only 24% of participants were good sleepers with low CES-D scores (Group 1; $n=83$). In participants with poor sleep (66%), 37% had low CES-D scores (Group 2; $n=85$) and 63% had high CES-D scores (Group 3; $n=143$). Group 3 had significantly worse circadian rhythm markers (mesor, $p=.024$; amplitude, $p=.009$; autocorrelation, $p=.002$) and napped longer during the day ($p=.014$). Group 3 had significantly worse liver function (higher plasma levels of aspartate transaminase AST and alanine transaminase ALT; both p values $=.028$), higher plasma levels of inflammatory cytokine IL-1 β ($p=.028$), and lower thyroid stimulating hormone (TSH $p=.026$). The groups did not differ on age, body mass index, caffeine, smoking, alcohol, sleep efficiency, or any markers of HIV disease severity such as CD4 cell count, viral load, or years since diagnosis. As expected, Group 3 also significantly differed on outcome measures that included higher anxiety, worse fatigue, and lower cognitive function.

Implications for Practice and Research: Risk for depression was uncommon (24%) in good sleepers. Both good sleepers and poor sleepers with low depression risk were clinically distinguished from those with co-morbid insomnia and high risk for depression by dampened circadian rhythms and more day sleep, inflammation, and poor liver and thyroid function. In addition to plasma biomarkers that may distinguish between these two co-morbid conditions, genetic markers and longitudinal studies would further add to understanding potential mechanisms and trajectories for co-morbid symptoms and provide future direction for tailoring sleep behavioral strategies to minimize the co-morbid symptom experience in chronic illnesses such as HIV. Intervention strategies would be more effective if tailored to the primary complaint of disturbed sleep and altered circadian rhythm before the onset of comorbidities such as depression and before other adverse outcomes that include anxiety, fatigue, and cognitive impairment.

Funding: This research was supported by a grant from the National Institutes of Health/National Institute of Mental Health (NIMH, 5R01MH074358).

SLEEP DISTURBANCE IN CHRONIC HEALTH CONDITIONS

Stroke Symptoms and Sleep-Related Impairment in Stroke Survivors

*Eeeseung Byun, RN, PHD
Assistant Professor
Biobehavioral Nursing
and Health Informatics
University of Washington
Seattle, WA*

*Pamela H. Mitchell, RN, PHD, FAHA,
FAAN, Professor Emeritus
Biobehavioral Nursing
and Health Informatics
University of Washington
Seattle, WA*

Background/Purpose: Up to 80% of stroke survivors experience sleep disturbance. Stroke survivors may also experience sleep-related impairment (e.g., impairment related to wake alertness, sleepiness, tiredness, and overall sleep-wake function). Little is known about factors affecting sleep-related impairment in stroke. The purpose of this study was to examine the relationship between stroke symptoms and sleep-related impairment in community dwelling stroke survivors.

Methods: A cross sectional analysis with 100 community dwelling stroke survivors was conducted using baseline data from the Living Well with Stroke 2 (LWWS2) Trial, a randomized controlled trial to determine the effect of brief psychosocial/behavioral therapy on post-stroke depression. Sleep-related impairment and stroke symptoms (stroke recovery and 8 domains; strength, hand function, activities of daily living [ADL]/instrumental activities of daily living [IADL], mobility, communication, emotion, memory and thinking, and social participation) were assessed with the PROMIS Sleep-Related Impairment and the Stroke Impact Scale, respectively. Demographic and clinical characteristics, social support (ENRICH social support inventory), fatigue (PROMIS fatigue scale), and depression (Hamilton Depression Rating Scale) were also assessed. Univariate analyses (i.e., person correlation, analysis of variance, *t* tests) were conducted to examine the relationship of stroke symptoms, demographic and clinical characteristics, social support, fatigue, and depression with sleep-related impairment. In multivariate analysis, all factors that were significant in the univariate analyses were included.

Results: The mean sleep impairment was 56.4 ± 6.2 (range 30.0 – 80.1). In the univariate analyses, stroke recovery ($p = .006$) and 7 stroke symptom domains; strength ($p = 0.045$), ADL/IADL ($p = .005$), mobility ($p < .001$), communication ($p < .001$), emotion ($p < .001$), memory and thinking ($p < .001$), and social participation ($p = .002$) were independently correlated with sleep-related impairment. Social support ($p = .038$), fatigue ($p < .001$) and depressive symptoms ($p < .001$) were also independently correlated with sleep-related impairment. In the multivariate analysis, the mood domain ($\beta = -.108$, $t = -3.416$, $p = 0.001$) and fatigue ($\beta = 0.351$, $t = 4.04$, $p < .001$) were associated with sleep-related impairment.

Conclusions: Our findings suggest stroke symptoms may play a role in developing sleep-related impairment. An intervention targeting stroke symptoms may be useful in improving neurologic recovery and sleep as well as reducing sleep-related impairment in stroke survivors.

Funding: This work was funded by NIH/NINR R01NR007755 and K23NR017404.

SLEEP DISTURBANCE IN CHRONIC HEALTH CONDITIONS

Sleep Disturbances in Parents Caring for Children with Juvenile Arthritis

*Weichao Yuwen, PhD, RN
Assistant Professor
Nursing and Healthcare Leadership
University of Washington Tacoma
Tacoma, WA*

*Jenny Hsin-Chun Tsai, PhD, ARNP,
PMHCNS-BC, Associate Professor
Department of Psychosocial
& Community Health
University of Washington
Seattle, WA*

*Teresa M. Ward, PhD, RN
Professor
Department of Psychosocial & Community Health
University of Washington
Seattle, WA*

Background and Purpose: Juvenile idiopathic arthritis (JIA) is a common childhood chronic condition of unknown etiology. Children with JIA not only experience episodes of joint swelling and pain, but also suffer from disturbed sleep. The care and management of JIA in young children heavily depends upon their parents. The impact of the illness on parent nighttime sleep and the family has not been well studied. The purpose of this study was to describe parents' sleep and the impact of their sleep on the family when caring for 2- to 5-year-old children with JIA.

Methods: As part of a larger study, 13 parents who had a young child with JIA (JIA group) and 16 parents who had a typically developing young child (control group) completed the Pediatric Quality of Life (PedsQL) Family Impact Module (36 items, Cronbach's alpha = 0.97) and the Patient-Reported Outcomes Measurement Information System (PROMIS) Measures including Sleep Disturbance (8 items, Cronbach's alpha = 0.90), Sleep-Related Impairment (8 items, Cronbach's alpha = 0.78), and Fatigue (7 items, Cronbach's alpha = 0.79). Parents of children with JIA were contacted 6 months later for a follow-up interview; nine of them were interviewed. The interviewer described study findings from the previous surveys and asked follow-up questions to expand on the survey findings. Descriptive statistics and independent *t*-tests were used to analyze the survey data, and content analysis was employed for the interview data.

Results: Twenty-nine parents completed the surveys, 93% were female, 72% had a college degree or higher, 79% were Caucasian with a mean age of 33 years. Compared to parents in the control group, parents in the JIA group had significantly worse PedsQL Family Impact total scores ($p < 0.05$) and higher scores on the worry subscale ($p < 0.001$). Parents in the JIA group had increased fatigue, sleep disturbances and sleep-related impairment, but the differences were not significant. Common themes from the parent interviews were many "sleepless nights" due to their child's JIA symptoms and "worrying" about their child, which led to feeling tired all the time. Frequently reported worries included whether the medical treatments were working, the side effects of the treatments, and the child's future.

Implications: Caring for a young child with a chronic condition impacted both the parents and the family function. Parents' worry, sleep disturbances, and fatigue are interrelated and are important for nurses to assess. Interventions addressing the needs of the parents may not only improve parent functioning but also family function in families with children with a chronic condition.

Funding: This work was funded by NIH/NINR P30NR016585, P30NR011400, the Sigma Theta Tau International Psi Chapter-at-Large Small Grant, the University of Washington Warren G. Magnuson Scholarship, and the University of Washington Hester McLaws Nursing Scholarship.

Abstracts of Symposium Presentations

SLEEP SELF-MANAGEMENT INTERVENTIONS

SLEEP SELF-MANAGEMENT INTERVENTIONS

Overview: Sleep Self-Management Interventions

Teresa M. Ward, RN, PhD

*Interim Chair & Professor, Alumni Endowed Professor in Nursing
Co-Director, Center for Innovation in Sleep Self-Management
Psychosocial & Community Health, School of Nursing
University of Washington, Seattle, WA*

*Hilaire Thompson, PhD, RN, FAAN
Professor*

*Susan M. McCurry, PhD
Professor*

*Carol A. Landis, PhD, RN, FAAN
Professor Emeritus*

*George Demiris, PhD
Professor*

*Margaret Heitkemper, PhD, RN, FAAN
Professor*

*Ken Pike, PhD
Research Consultant*

*School of Nursing
University of Washington
Seattle, WA*

Sleep deficiency, including an inadequate amount of sleep, poor quality sleep, or a sleep disorder, is often comorbid with chronic health conditions in pediatric and adult populations. The increasing problem of sleep deficiency coincides with the rising rates of obesity, diabetes, and development of other chronic conditions. Left untreated, sleep deficiency leads to significant decrements in daytime function and compromises physiological processes, thereby placing individuals at increased risk for adverse health outcomes. To date, the majority of interventions to improve sleep are psychoeducational and/or behavioral provider-based programs, and do not consistently address unique end-user needs. Further, few of these interventions include self-management skills (e.g., goal setting, motivation, self-efficacy) that are important considerations for intervention sustainability. Thus, efforts to target the development and testing of self-management interventions to promote sleep using patient centered technologies to assist adults and children to obtain adequate, good quality sleep is timely and important.

In this symposium we describe study designs that are appropriate for the development and testing of patient centered technologies, and methods to assess the integration of patient centered technologies for sleep self-management in pediatric and adult populations. We present the findings from two pilot studies. The first presentation will describe the development and testing, and methods to assess patient centered technologies to improve sleep. The second presentation will describe the feasibility and acceptability of a sleep intervention for school-age children with persistent asthma and their parents. The third presentation will describe the feasibility and acceptability of a mobile motivational physical activity-targeted intervention in older adults with sleep disturbance and osteoarthritis. Implications for future research and for clinical practice will be highlighted for each study.

Objectives: Following this symposium, the learner will be able to

1. Describe the development and testing of patient centered design technologies and the importance of end user input in the development and design of health technology applications.
2. Understand the importance of obtaining feasibility and acceptability data in the development and testing of self-management interventions to improve sleep in pediatric and adult populations.
3. Describe the lessons learned in pilot testing self-management interventions to promote sleep.

Funding: Research was supported by NIH, National Institute of Nursing Research, P30 NR016585, Center for Innovation in Sleep Self-Management, University of Washington, School of Nursing; NIH, National Institute of Nursing Research R21NR017471.

SLEEP SELF-MANAGEMENT INTERVENTIONS

Designing and Implementing Patient Centered Technologies for Sleep Self-Management

*William Kearns, BS
Graduate Research Assistant
Center for Innovation in Sleep-Self Management
University of Washington
Seattle, WA*

*Hilaire Thompson, PhD, APRN,
AGACNP-BC, FAAN
Professor
School of Nursing
University of Washington
Seattle, WA*

*George Demiris, PhD, FACMI
Professor
School of Nursing
University of Pennsylvania
Philadelphia, PA*

Background and Purpose: An overarching goal of the Center for Innovation in Sleep Self-Management (CISSM) is to integrate existing and design new informatics tools and patient centered technologies (PCTs) that increase the ability of individuals to self-manage their sleep with the goal of improving health outcomes. The CISSM assists individual investigators in developing skills to design and test PCTs to promote self-management strategies and skills (such as self-efficacy, motivation, patient activation) that address disrupted and inadequate sleep or sleep of poor quality. The purpose of this session is to highlight strategies for the design and implementation of PCTs in symptom and self-management research.

Methods: We work with CISSM investigators to employ iterative, participatory design processes anchored in analysis, evaluation, and ideation sessions in three phases of design development: Observe, Explore, and Create. The design process in this model is characterized by a convergence of analysis and synthesis as hypothesis-building during design. This promotes a cyclical design process which coordinates three pools of design expertise: field studies—what is interesting; ideation—what is promising; and detailed design—what is required. The benefit of using this design cycle method is that it facilitates a continuous cyclical process where iterative loops can be connected between any of its stages where required. In the conventional model of iterative refinement of a given prototype, designers can find themselves locked in, both procedurally and psychologically, by the constraints imposed by earlier choices and efforts. A series of methods, including usability sessions with ‘think aloud’ components or task analysis, observations and in-depth interviews can reveal whether PCTs are considered easy to use and useful by the target end users. CISSM Core Faculty have also established linkages with industry partners to facilitate creative interactions with end users to share ideas, expectations, and concerns about potential tools for self-management.

Results: The role of informatics in facilitating innovation in sleep self-management has resulted in a portfolio of PCTs to help patients monitor their behavior, set goals and receive feedback about their overall progress in adopting healthy behaviors. We will provide exemplars from successful projects working with diverse populations across the lifespan.

Implications: Our design and implementation toolkits can be used by other investigators to support the development and testing of PCTs for patient engagement and symptom self-management.

Funding: Supported, in part, by a grant from NIH/NINR P30NR016585 Center for Innovation in Sleep Self-Management (Ward/Heitkemper PIs).

SLEEP SELF-MANAGEMENT INTERVENTIONS

Web-Based Sleep Intervention for Children with Asthma and Their Parents

Jennifer Sonney, PhD, APRN, PPCNP-BC, Assistant Professor

Hilaire Thompson, PhD, APRN, AGACNP-BC, FAAN, Professor

Carol A. Landis, PhD, RN, FAAN, Professor Emeritus

Susan M. McCurry, PhD, Research Professor

Ken Pike, PhD, Research Consultant

Teresa M. Ward, PhD, RN, Professor

University of Washington School of Nursing

Seattle, WA

Background and Purpose: Asthma is the most common chronic condition of childhood, affecting approximately 6 million US children. Among children with asthma, sleep disturbances are twice as prevalent compared to healthy peers, and has been associated with impaired socioemotional and cognitive functioning and poor health outcomes. The purpose of this project was to pilot test Sleep Intervention for Kids and Parents (SKIP), a web-based, tailored intervention for sleep deficiency in 6 to 11 year old children with asthma and their parents. Our aims were to (1) describe the feasibility and acceptability of SKIP, and (2) to explore the changes in sleep deficiency measures, including total sleep time, sleep efficiency, and change in reported bedtime.

Methods: Children with asthma and sleep deficiency ages 6 to 11 years and one of their parents enrolled in this single-group pre-post design. Baseline assessment included sleep habits surveys followed by 10 days of actigraphy and sleep diaries. After receiving written and verbal feedback on their baseline assessment, dyads were given access to three 30-minute SKIP website modules: bedtime routine, sleep environment, and sleep quality. For each of the 8 intervention weeks, dyads selected one module to complete; modules began with approximately 5-7 minutes of educational content, guided dyads through module-related goal-setting, anticipating barriers, and problem solving. Post intervention and 12-week follow-up assessments included both actigraphy and sleep diaries. At 12 weeks, participants completed self-reported questionnaires about sleep habits, SKIP acceptability, and a semi-structured interview. Feasibility was measured by study recruitment, enrollment and attrition. Longitudinal mixed-effects regression models with weeks as a fixed categorical variable were used to analyze changes in sleep deficiency measures.

Results: Fifty-nine parents completed eligibility screening. Thirty-three of the 39 eligible dyads enrolled in the study and completed baseline measures. Of 29 dyads that started the intervention, 25 (86%) completed the intervention and all study visits. Post-intervention interviews revealed that SKIP was highly acceptable, with all dyads reporting liking the content and the time commitment of 30 minutes per week. The most common suggestions for improvement included streamlining the weekly tasks and considering an app-based platform to improve accessibility. Children in SKIP had improved post-intervention sleep deficiency measures. Both total sleep time (16.1 minutes; 95% CI, 5.7 to 26.5; $p=.002$) and sleep efficiency (3.8%; 95% CI, 2.5 to 5.1; $p<.001$) increased. Children also showed more consistent bedtimes, with 39.2 fewer minutes of bedtime variability (95% CI, -46.5 to -32.0; $p<.001$). These trends were maintained at the 12 week follow-up for sleep efficiency and bedtimes while total sleep time was unchanged from baseline.

Implications: SKIP was a feasible, acceptable and effective intervention that paired parents and children together to improve sleep. With minor refinements, we anticipate scaling this tailored intervention for a larger clinical trial.

Funding: This research was supported by the University of Washington Center for Innovation in Sleep Self-Management (CISSM) grant (NIH/NINR P30 NR016585).

SLEEP SELF-MANAGEMENT INTERVENTIONS

Mobile Intervention to Improve Sleep in Older Persons with Osteoarthritis: Pilot Study

Oleg Zaslavsky, PhD, RN, Assistant Professor¹
Hilaire Thompson, PhD, RN, FAAN, Professor¹
Susan M. McCurry, PhD, Professor¹
Carol Landis, PhD, RN, FAAN, Professor Emeritus¹
George Demiris, PhD, Professor²
Teresa Ward, PhD, RN, Professor¹
Margaret Heitkemper, PhD, RN, FAAN, Professor¹

¹*School of Nursing, University of Washington, Seattle, WA*

²*School of Nursing, University of Pennsylvania, Philadelphia, PA*

Background and Purpose: Commercially available wearable activity tracking devices coupled with mobile health technologies are becoming ubiquitous and may support sustainable health behavioral change. We evaluated the feasibility and preliminary efficacy of a mobile self-management intervention that employed commercially available activity trackers (Fitbit, San Francisco, CA) and motivational interviews for delivering a physical activity and sleep improvement intervention among community dwelling older adults with osteoarthritis. We also assessed self-efficacy (SEff) and acceptance of sleep difficulties (ASD) as potential self-management change agents that are linked to physical activity and sleep behaviors.

Methods: Participants were adults 65 years and older with osteoarthritis and moderate insomnia symptoms (Insomnia Severity Index [ISI] ≥ 12). This was a prospective quasi-experimental pilot study to evaluate a novel intervention which employed activity trackers synced to a dashboard that triggered personalized weekly step count goals and motivational messages. Participants also received three motivational phone calls during the 14-week active intervention period. Assessments were collected at baseline, week 14 (post-treatment), and week 19 (follow-up). Feasibility was assessed in terms of number of participants screened, eligible, and enrolled, and in terms of retention rates. Primary efficacy outcomes were total ISI score and sleep statistics (total sleep time, TST; sleep efficiency, SE) as measured by wrist actigraphy (Actiwatch; Respironics, Inc., Murrysville, PA). SEff, ASD, and step count were process outcomes. Mixed effect models were used to measure change over the three time points.

Results: Of the 46 potential candidates screened, 24 participants were enrolled and 23 completed the study. Mean age was 71.0 ± 4.0 years and 70% were female. Over the first week of the study, participants wore Fitbit trackers on average 20.4 ± 2.2 hours a day and took 5016 ± 2524 steps. They had ISI scores of 14.6 ± 5.7 ; average sleep time and sleep efficiency were 7.0 hours \pm 1.2, and 84.1% \pm 8.1, respectively. There was no attrition over the 14-week intervention. Over 19 weeks the ISI scores improved modestly on average by 1.2 points (95% CI 2.43; 0.05) ($p=0.04$) such that at weeks 14 and 19 the ISI measures were 12.2 ± 6.7 and 11.8 ± 6.3 respectively. Similarly, over 19 weeks the ASD score improved on average by 2.5 (95% CI 0.9; 4.9) $p=0.02$ points. There were no significant post-treatment or follow-up changes observed for actigraphy sleep outcomes, SE, or step counts.

Implications for Translation to Practice/Further Research: It is feasible to use a technology-enhanced behavioral intervention for older adults with osteoarthritis to improve their sleep experience. This adds to a growing literature that suggests older adults might reap benefits from mobile interventions. Improvements in ISI and ASD scores, although small, echo growing research interest in acceptance-based processes for treating insomnia symptoms. Motivational strategies designed to enhance self-efficacy and increase physical activity may also be important contributors to sleep interventions with older adults. Further research is needed to better understand potential individual and institutional facilitators and barriers to use of mobile interventions for improving sleep in this population.

Funding: This research was supported by the University of Washington Center of Innovation on Sleep Self-Management (NIH, NINR Grant P30 NR016585).

Abstracts of Symposium Presentations

**THE STATE OF THE CLINICAL NURSE
LEADER KNOWLEDGE BASE: FOUNDATIONS,
THEORIES, AND EVIDENCE**

THE STATE OF THE CLINICAL NURSE LEADER KNOWLEDGE BASE: FOUNDATIONS, THEORIES, AND EVIDENCE

Overview: The State of the Clinical Nurse Leader Knowledge Base: Foundations, Approaches, Evidence

*Miriam Bender, PhD, RN
Assistant Professor
Sue & Bill Gross School of Nursing
University of California Irvine
Irvine, CA*

Background: The science of health care delivery focuses on how patients actually receive care, and has grown with the realization that current delivery models are not achieving the triple aim of better health, better care and better value. Nurses are a critical component of healthcare delivery, yet there is limited evidence describing how to organize nursing knowledge and practice into care models that catalyze quality and safety. Clinical Nurse Leader (CNL) integrated care delivery is one approach to organizing nursing knowledge and practice into frontline models of care that is increasingly being adopted in health systems across the USA.

Aim: The purpose of this symposium is to highlight efforts by policy makers, educators, researchers, practice leaders, and clinicians to advance the knowledge base for CNL education and integration into frontline nursing care delivery. This is not an easy task; nursing models of care are complex, dynamic, and inherently context-sensitive. Attention to research foundations, approaches, and methodologies with the capacity to capture this dynamic complexity is critical, and has been a driving force for generating CNL knowledge.

Session Overview: The first abstract describes the 1999 launch and evolution of the CNL initiative, including the development and goals of the national-level CNL Research Collaborative (CNLRC). The CNLRC is leveraging academic-practice-policy partnerships to build a solid foundation for advancing CNL education and practice knowledge. Work to-date includes the development and empirical validation of a CNL Practice Model that provides an explanatory pathway for CNL practice integration, foregrounding organizational readiness and CNL structuring components theorized to influence CNL implementation, practice, and outcomes. The second abstract describes the systems-based participatory approach used to study the CNL integrated care model in one regional health system, with researchers and health system stakeholders working together to decide what the research questions should be and how data should be collected. The participatory approach resulted in seamless and efficient mobilization of study procedures, enhancing both the statistical and analytic power of the research, and produced CNL implementation and practice evidence that was easily translated into systematic action. The third abstract reports on a mixed methods study using nation-level quantitative and qualitative data to compare patterns of CNL Practice Model operationalization across reported levels of CNL implementation success. The study identified different CNL implementation patterns for low versus high success settings, helping to explain the variability of CNL practice and outcomes found in the literature. The final abstract summarizes the work done to develop and utilize statistical models for analyzing longitudinal data to estimate changes in quality outcomes and outcome consistency before and after CNL implementation. The modeling enabled the quantification of a potential explanatory mechanism for CNL effectiveness; findings suggest CNL practice integration is associated with the production of stable clinical microsystem practices that help to reduce clinical variability, and thus improve care quality.

Conclusion: The abstracts present a spectrum of CNL inquiry, from initial foundations to current efforts conceptualizing CNL practice, quantifying CNL integrated care delivery effectiveness, and identifying implementation factors that influence CNL practice and outcomes.

THE STATE OF THE CLINICAL NURSE LEADER KNOWLEDGE BASE: FOUNDATIONS, THEORIES, AND EVIDENCE

Scaling Nursing Care Delivery Innovations via Academic-Practice-Policy Partnership

*Patricia L. Thomas, PhD, RN, FAAN, FNAP, NEA-BC, ACNS-BC, CNL
Associate Dean for Practice, Kirkhoff College of Nursing
Grand Valley State University, Grand Rapids, MI*

*Linda Roussel, PhD, NEA-BC, CNL, University of Alabama, Birmingham
James L. Harris, PhD, RN, MBA, CNL, FAAN, University of South Alabama*

*Miriam Bender, PhD, RN, University of California Irvine
Marjory Williams, PhD, RN, NEA-BC, Central Texas Veterans Health Care System
LeeAnna Spiva, PhD, RN, WellStar Health System*

*Nancy Hilton, MN, RN, NEA, St. Lucie Medical Center
Patricia Baker, MSN, RN, CNL, UT Health School of Nursing
Lisle Hites, MS, Med, PhD, University of Alabama, Birmingham*

*Robert LaPointe, MSN, RN, CNL, CCRN, Crescenz VA Medical Center
Joan M. Stanley, PhD, CRNP, FAAN, FAANP, American Assoc. of Colleges of Nursing
Elizabeth A. Murphy, BSN, MSBA, RN, NEA, FACHE, Mercy Health Saint Mary's*

Background: The nursing profession is tasked with identifying and testing models of care with potential to add value to health care delivery if widely implemented. The Clinical Nurse Leader (CNL) initiative was developed by the American Association of Colleges of Nursing (AACN) in direct response to this challenge. Since then, there has been continuous progress in the growth of CNL education programs and the number of certified CNLs across the U.S. and abroad.

Aim: The purpose of this presentation is to describe the evolution of the CNL initiative, including the development, progress, outcomes, and goals of the national-level CNL Research Collaborative (CNLRC), as a case study in leveraging academic-practice-policy partnerships to advance the field of nursing education and practice.

Methods: A historical narrative approach is used to describe the history, evolution, and current state of the CNL initiative.

Results: The AACN pilot phase of the CNL initiative started in 2003. All published pilot reports described improved quality and safety outcomes, although metrics varied widely and were not comparable across pilot sites. Overall, findings demonstrated the feasibility of the CNL care model to improve care quality, although questions remained about CNL practice effectiveness and best practices for integration into health care delivery. Therefore, a series of studies was conducted to gain conceptual understanding of CNL practices and their connection with care outcomes. This resulted in a conceptual model of CNL practice, which was refined by an expert panel and underwent face, content, and construct validity testing. The panel has since expanded to include key policy and practice stakeholders, and has been formalized into the CNLRC, an Agency for Healthcare Research and Quality affiliate practice-based research network, which aims to provide a robust and generalizable evidence base explaining CNL practice, quantifying its effectiveness, and identifying how CNLs can be implemented to consistently and positively influence care quality and safety.

Conclusions: CNLRC members have collaborated on numerous studies advancing CNL theory and evidence. Studies include systematic literature reviews, qualitative studies, case studies, mixed methods studies, and commentary pieces synthesizing knowledge and next steps. Current efforts are focused on quantifying the effect of the CNL model on changes in nationally endorsed and standardized quality and safety outcomes. This involves research designs (e.g. hybrid implementation-effectiveness design and quasi-experimental interrupted time series design) and analytic techniques (e.g. longitudinal data analysis and qualitative comparative analysis) that enhance internal and external validity, ensuring findings will be generalizable.

Implications: The CNL is a nursing initiative that has expanded and grown over the last 18 years, from an information-gathering taskforce to a formalized practice-research collaborative. The CNL care model has demonstrated its potential to achieve outcomes for patient populations with acute and chronic disease care needs. The CNLRC aims to further the knowledge base, through a comprehensive, theory-informed, and contextually sensitive approach to developing an evidence-based model of nursing care delivery that has great potential for transferability to health systems considering care delivery redesign to achieve consistent patient quality outcomes.

THE STATE OF THE CLINICAL NURSE LEADER KNOWLEDGE BASE: FOUNDATIONS, THEORIES, AND EVIDENCE

System-Based Participatory Approach to Generating Clinical Nurse Leader Knowledge

LeeAnna Spiva, PhD, RN
Assistant Vice President Nursing
Operations and Practice
WellStar Health System
Atlanta, GA

Miriam Bender, PhD, RN
Assistant Professor
Sue & Bill Gross School of Nursing
University of California Irvine
Irvine, CA

Background: The science of health care delivery focuses on how patients actually receive care, and has grown with the realization that current delivery models are not achieving the triple aim of better health, better care and better value. The Institute of Medicine's *Future of Nursing* report emphasized the redesign of nursing care delivery as a promising approach to improving care quality and safety, and highlighted the Clinical Nurse Leader (CNL) care model as an innovative approach with great potential. However, the CNL care model is a complex healthcare intervention involving a wide variety of contextual variables -such as staffing mix ratios, resource availability, and patient populations cared for- which makes it difficult to examine rigorously and systematically across diverse settings. Researchers are increasingly using a participatory approach when studying complex interventions because of its suitability in foregrounding context-specific knowledge and implementation practices. A participatory approach to generating implementation and effectiveness evidence for the CNL care model can leverage both academic and practice knowledge to conduct research that is feasible, relevant, and produces findings that can be more easily translated into systematic action.

Aims: We describe the systems-based participatory approach used to study the CNL care model in one regional health system, focusing on how the participatory approach resulted in data that were immediately leveraged by system stakeholders to improve their CNL initiative.

Methods: We developed and documented activities in all stages of the system-based partnered effort: engagement, formalization, mobilization, and maintenance. Engagement involves identifying partners and partner interests. Formalization involves establishing decision-making processes. Mobilization involves system-level readiness and study conduct, including processes for ongoing data review and feedback. Maintenance involves findings dissemination and utilization.

Results: Researchers and health system partners worked together to decide what the research questions should be and how data should be collected so it didn't disrupt clinical practice, which created a strong sense of readiness and enthusiasm for commencing study procedures. This resulted in seamless and efficient mobilization of the study procedures, resulting in robust recruitment into the survey and interviews, providing a representative sample of the health system and enhancing both the statistical and analytic power of the analyses. The study was able to measure the level of CNL practice and outcomes at the system level and generate a rich description of how the health system operationalized the CNL model in practice. Findings were used to guide evidence-based improvements in the health system's CNL onboarding process, role differentiation, performance, recruitment, and to strengthen CNL growth and development opportunities.

Implications: The systems-based participatory approach enhanced perceived relevance of the research to the participating system, resulted in research that was not disruptive to the participating system, and engendered a sense of ownership in research findings that allowed for empowered action post-study. Lessons learned can be used in future CNL studies, and findings can be used as evidence for future recruitment efforts, creating a broader participatory network and potentially speeding up CNL evidence generation and improving the level and scope of dissemination and implementation efforts.

Funding: Study was supported by a grant (no number) from the Commission on Nurse Certification.

THE STATE OF THE CLINICAL NURSE LEADER KNOWLEDGE BASE: FOUNDATIONS, THEORIES, AND EVIDENCE

Linking Clinical Nurse Leader Implementation Patterns with Successful Adoption

*Marjory Williams, PhD, RN, NEA-BC
Central Texas Veterans Health Care
System Temple, TX*

*Miriam Bender, PhD, RN, CNL
University of California, Irvine
Irvine, CA*

*Wei Su, PhD
University of Alabama at Birmingham
Birmingham, AL*

*Lisle Hites, MS, Med, PhD
University of Alabama at Birmingham
Birmingham, AL*

*Gianna Chandler, BSc, RN
Stanford Medical Center
Stanford, CA*

*John David Coppin, MPH
Central Texas Veterans Health Care
System Temple, TX*

Background: Clinical Nurse Leader (CNL) integrated care delivery is a frontline nursing care model that is being increasingly adopted by health systems across the U.S. and abroad. However, variability in implementation and outcomes has been noted across health settings. A recently validated CNL Practice Model provides an explanatory pathway for CNL practice integration that highlights organizational readiness and CNL structuring components theorized to influence CNL implementation, practice, and outcomes.

Aim: The purpose of this study was to identify and compare patterns of the operationalization of CNL Practice Model domains across reported levels of CNL implementation success.

Methods: We conducted a secondary analysis of a 2015 national-level survey of clinicians and administrators involved in CNL initiatives in their health system. A validated CNL Practice Survey instrument included subscales measuring the presence (0-100%) of the five domains of the CNL Practice Model (organizational readiness, CNL structuring, CNL practices, outcomes, and value); a measure of perceived CNL implementation success (from 0-100%); and open-ended comments. The data were stratified into success score quartiles. Domain presence mean scale scores and 95% bias corrected bootstrap intervals were calculated for each quartile to determine differences. Open-ended comments were coded as positive, negative, or mixed, and then mapped to CNL Practice Model domains using deductive qualitative content analysis.

Results: Of total respondents (N=920), 543 (59%) provided success scores, with 349 (38%) providing open-ended comments. Mean success score for the entire sample was 63 (CI=61-66). Success quartile cut-off scores were 49, 70, and 90. Presence scores for each CNL Practice Model domain differed by quartile and increased across success score quartiles. Lowest presence scores were found in the organizational readiness domain, ranging from 46 in the lowest success quartile (Q1) to 82 in the highest success quartile (Q4). Highest presence scores were found in the CNL practice domain, ranging from 65 in Q1 to 92 in Q4. Of 127 negative comments, 45% were mapped to Q1. Of 52 positive comments, 55% were mapped to Q4. Within Q1, the majority of comments were negative, linked to the domains of organizational readiness and CNL structuring, and provided details about gaps in leadership engagement and CNL role structuring that were described as barriers to CNL practice and implementation success. Within Q4, the majority of comments were positive and more evenly spread across all model domains. Quartile 4 comments provided details about leadership support that promoted spread of CNL practice across multiple units in settings, descriptors of expert level CNL practices, and specified outcomes that CNL-integrated units were achieving.

Conclusions: Operationalization patterns differed for low versus high success settings. The study provides further empirical evidence to support the explanatory pathway proposed by the CNL Practice Model; that adequate organizational readiness and appropriate CNL workflow structuring are critical antecedents for CNL practice manifestation and production of expected outcomes. Findings contribute to a better understanding of the variability of CNL practice and outcomes found in the literature, and provide information about structural domains that can be strategically targeted to better prepare settings for CNL implementation.

THE STATE OF THE CLINICAL NURSE LEADER KNOWLEDGE BASE: FOUNDATIONS, THEORIES, AND EVIDENCE

Developing Analytic Tools to Measure Clinical Nurse Leader Impact on Quality Outcomes

Maricela Cruz, MS, BA
Doctoral Candidate
Department of Statistics
University of California, Irvine
Irvine, CA

Miriam Bender, PhD, RN
Assistant Professor
Sue & Bill Gross School of Nursing
University of California, Irvine
Irvine, CA

Elizabeth A. Murphy, BSN, MSBA,
RN, NEA, FACHE
Vice President and Chief Nursing Officer
Mercy Health Saint Mary's
Grand Rapids, MI

Hernando Ombao, PhD
Professor of Statistics
King Abdullah University of Science and
Technology (KAUST)
Thuwal, Saudi Arabia

Background: While nurses represent the largest single component of hospital workforce, there is limited research focusing on nursing care models as an organizational strategy for quality outcomes. A nursing care model is a complex healthcare intervention, with multiple interrelated and interdependent components and numerous cross-disciplinary mechanisms of action. This interdependency creates challenges in terms of rigorous research design and statistical analysis. The traditional 'gold standard' for determining efficacy of an intervention via a randomized clinical trial is impractical and many times unfeasible for complex interventions because of the inability to control for such a wide set of interrelated components. Interrupted time series (ITS) is a powerful quasi-experimental research design that is increasingly being used to examine complex healthcare interventions. ITS analysis identifies both level changes before and after the intervention as well as trend changes over time. While powerful, there are limitations to traditional ITS segmented regression approaches: they (a) restrict the interruption's effect to a predetermined time point or removes data for which the intervention effects may not be realized; (b) neglect plausible differences in temporal dependence and volatility over time.

Aim: To address these limitations, we developed a novel formal statistical modeling procedure for estimation and inference of the following key components of the analysis: change-point; pre and post-intervention trend; pre and post-intervention auto-correlation; and variance. The model was then used to estimate changes in care quality outcomes as one health system redesigned their frontline nursing care model to integrate CNLs.

Methods: The Robust-ITS model was developed and validated using un-published CNL outcome data. The model formally estimates the time delay between the formal intervention implementation and the intervention effect change point via maximum likelihood methods over a pre-determined set of possible change points. Robust-ITS then models the mean function of an outcome via segmented regression with the estimated change point and the zero-mean random fluctuations around the mean function via an auto-regressive process of order one. The model tests predictability of health outcomes by estimating outcome temporal dependence and variability pre and post interruption. The model was used to analyze patient satisfaction with 7 Press Ganey quality indicators up to 30 months before and after formally integrating CNLs into an integrated Michigan healthcare system. The Robust-ITS model estimated quality outcome (a) change point, (b) level change, (c) trend change, (d) auto-correlation, and (e) volatility, pre-post intervention implementation.

Results: Outcome change point varied across units, from 4 months post 'soft' implementation to 2 months post formal implementation. The lowest-performing showed significant improvement in 3 measures, but there were no significant increases at the hospital level. Importantly, variation decreased significantly for every indicator at the hospital level (from 38-71%, $p=0.0-0.007$), and all units showed improvement in outcome consistency after CNL implementation (range 0-58%).

Conclusions: The Robust-ITS model enabled the quantification of a potential explanatory mechanism for CNL care model effectiveness; findings suggest the CNL care model is associated with the production of stable clinical microsystem practices that help to reduce clinical variability, and thus improve care quality.

Abstracts of Symposium Presentations

**SUPPORTING FAMILY CAREGIVERS
PROVIDING COMPLEX CHRONIC CARE:
IMPLICATIONS FOR NURSING**

SUPPORTING FAMILY CAREGIVERS PROVIDING COMPLEX CHRONIC CARE: IMPLICATIONS FOR NURSING

Overview: Supporting Family Caregivers Providing Complex Chronic Care: Implications for Nursing

Janice F. Bell, PhD, MN, MPH, RN
Professor and Associate Dean for Research
Betty Irene Moore School of Nursing
University of California Davis, Sacramento, CA
jfbell@ucdavis.edu

An estimated 45 million individuals in the United States live with serious illness, defined as one or more health conditions that carry “high risk of mortality and either negatively impact a person’s daily function or quality of life, or excessively strain their caregivers”. This symposium highlights research focused on family caregivers (i.e., unpaid caregivers related to care recipients by kinship, marital, or strong social ties) who assist care recipients by assuring their basic needs (e.g., meals, shelter, transportation, essential daily personal care); providing support (social, emotional); coordinating care/appointments; participating in healthcare decision-making; managing medication; procuring and overseeing use of medical equipment; and performing medical/nursing tasks in the home. Taken together, the economic value of this unpaid care is estimated at \$470 billion dollars annually. Importantly, if not provided by family caregivers, the services would otherwise be unavailable or unaffordable for many individuals with serious illness.

As the population ages, the number of family caregivers required to adequately address the needs of individuals with serious illness, most of whom are older adults, is expected to increase dramatically. At the same time, an acute decline is projected in the “caregiver support ratio” of available caregivers to those needing care as the “baby boom” generation enters older-adulthood. Furthermore, with shorter hospital stays and more care provided in the home and community, family caregivers are increasingly expected to execute complex medical/nursing tasks previously performed by skilled providers in institutional settings, often with little training or ongoing support.

These trends have implications for nurses and nursing science and call for new approaches in practice, education and research to more formally support family caregivers and integrate them into the healthcare workforce. Toward these goals, the researchers presenting in the four presentations in this symposium focus on specific aspects of family caregiving important to nurses by: 1) identifying unmet needs of military family caregivers, 2) examining relationships between medical/nursing task performance in the home and caregiver well-being, 3) exploring perspectives and practices of nurses to identify family caregivers and support their caregiving role, and 4) defining competencies needed for nurses and other health care professionals to support family caregivers in their vital roles.

Two of the presentations also highlight an innovative research methodology course designed to introduce doctoral nursing students at the Betty Irene Moore School of Nursing to data management and analysis. The students work in groups with faculty mentors to analyze health survey data and prepare co-authored manuscripts for publication, thereby building their CVs and supporting the rapid trajectory required for future academic success. Through the course, the students develop experience in the research process, team science, peer review and dissemination.

This session will be useful to faculty interested in developing quantitative methodology courses with similar aims and to nurses and other healthcare professionals interested in supporting family caregivers through research, clinical practice, education and advocacy.

SUPPORTING FAMILY CAREGIVERS PROVIDING COMPLEX CHRONIC CARE: IMPLICATIONS FOR NURSING

Partnering with Family Caregivers: Interprofessional Competencies

Kathryn Sexson, PhD

Assistant Clinical Professor

Department of Nursing, Family Caregiving Institute

*Betty Irene Moore School of Nursing, University of California Davis
Sacramento, CA*

Heather Young, PhD, UC Davis

Theresa A. Harvath, PhD, UC Davis

Patricia G. Archbold, DNSc, OHSU

Barbara Stewart, PhD, OHSU

Jennifer Mongoven, MPH, UC Davis

Kristen Bettega, BA, UC Davis

Purpose: This study used a combination of literature review, expert interviews and a modified Delphi approach to identify the competencies necessary to advance the ability of nurses and other healthcare professionals to incorporate families as an integral part of the healthcare team. The assessment was further expanded to include the family caregiver domains of preparedness given well-documented caregiver physical and mental health concerns and their desire to feel prepared to address the complex and dynamic nature of the family caregiving role.

Background: With revisions to healthcare reimbursement, older adults are discharged home with more complex care needs. One in five households is involved in a broad range of caregiving activities from checking on an aging parent to providing total care. In 2013, family caregivers (FCGs) provided an estimated \$470 billion in unpaid care, including approximately 80% of the long-term care of older adults. In early 2015, AARP conducted a national survey of FCGs which identified that many FCGs feel ill-prepared to assume the role. To successfully address the complex care needs of older adults with serious illness, nurses and other health professionals need to be educated to effectively partner with FCGs to achieve optimal outcomes for both the person receiving care and the FCG. However, there has been a lack of consensus on the ideal roles and responsibilities of nurses and other healthcare professionals working with families.

Methods: Experts identified from the academic, research and aging services fields were interviewed, and competencies were developed and validated using a modified Delphi approach. Given the findings of the AARP survey and the need for healthcare professionals to understand the breadth and depth of the comprehensive FCG assessment, the same process was used to expand the FCG assessment domain. The work of Archbold and Stewart (1995) was used to provide a framework for developing FCG domains of preparedness which were validated with experts in the field of family caregiving.

Outcomes: Four interprofessional FCG domains emerged from this process: 1) the nature of family caregiving; 2) family caregiving assessment and measurement; 3) collaborating with family caregivers; and 4) contextual conditions. These domains encompass theoretical perspectives, comprehensive assessment, evidenced-based interventions, shared decision making, and the heterogeneity of the individual caregiving situation. The FCG domains of preparedness consist of household tasks, personal care, mobility, health monitoring, emotional and social support, care coordination, medical/nursing tasks, shared-decision making, and caregiver self-care.

Conclusions: Through incorporation of the family caregiving competencies in the education of nurses and other healthcare professionals the potential exists to make significant changes in the provision of care to older adults and their family caregivers making them an integral part of the healthcare team. They are currently being used as the foundation for the development of the National League for Nursing's Achieving Excellence in Care – Caregiving simulation and a Graduate Academic Certificate in Family Caregiving. These competencies can be used to develop tools and resources to support FCGs which are culturally appropriate and reflect the care recipient's and FCG's values, preferences, and goals of care.

Funding: The Gordon and Betty Moore Foundation.

SUPPORTING FAMILY CAREGIVERS PROVIDING COMPLEX CHRONIC CARE: IMPLICATIONS FOR NURSING

Unmet Needs for Information and Support among Military Caregivers

Tina L. Rylee, BA, Doctoral Student

Sayantani Sarkar, BSN, Doctoral Student

Sarah C. Reed, PhD, MSW, MPH, Postdoctoral Scholar

Elbina Rafizadeh, RN, BSN, MSN, Doctoral Student

Janice F. Bell, PhD, MN, MPH, Professor and Associate Dean of Research

Betty Irene Moore School of Nursing

University of California, Davis

Sacramento, CA

Purpose/Aims: In the United States, there are 5.5 million military caregivers, defined as family members, friends, or other acquaintances who provide essential care and support to current or former military service members. The current study describes the prevalence and predictors of unmet information and support needs in this unique group of caregivers.

Rationale/Background: Until recently, little research has focused on military caregivers. In 2014, a comprehensive RAND report underscored the specific challenges experienced by military caregivers including greater physical, financial, and emotional strain when compared with civilian caregivers. Of note, military caregivers provide care and support for care recipients who are more likely to have complex illness when compared to their civilian care recipients. While this recent research improved our understanding of the increased burden associated with military caregiving, it also identified gaps for future work, including the need for additional studies to better understand unmet information and support needs to inform future interventions. The current study was designed to address this gap.

Methods: We examined data collected in the Caregiving in the U.S. Survey, a cross-sectional online survey fielded in 2014, by the National Alliance for Caregiving and the American Association of Retired Persons (AARP) for primary caregivers who had been in the role for at least six months. Four outcomes representing unmet needs were examined, each coded (yes/no) and measuring caregiver report of needing more help or information to: 1) keep the care recipient safe at home; 2) manage challenging behaviors such as wandering; 3) manage their own emotional and physical stress; and 4) make end-of-life decisions. Survey-weighted logistic regression was used to test associations between military caregiver status (military/civilian) unmet needs while controlling for key socio-demographic, caregiving and care recipient health variables, for nationally generalizable results.

Results: Compared to their civilian counterparts, military caregivers had significantly higher odds of reporting need for information or support to make end-of-life decisions (OR=2.22; 95% CI: 1.24, 3.97; $p=0.01$) and marginally significantly higher odds of reporting need for more information or support to manage physical and emotional stress (OR=1.64; 95% CI: 0.93, 2.88; $p=0.08$). In contrast, military caregivers had significantly lower odds of reporting need for more information or support to keep the care recipient safe compared to civilian caregivers (OR=0.54; 95% CI: 0.30, 0.95; $p=0.03$). Reports of unmet needs related to managing challenging behaviors were similar between military and civilian caregivers.

Implications of Translation to Practice/Further Research: Needs for information and support differ for civilian and military caregivers and may reflect direct or indirect impacts on caregivers arising from differences in TRICARE and Veterans Affairs health insurance coverage and related benefits, services and systems. Our findings suggest that future interventions may be required to support end-of-life care decision-making for military service members and their caregivers.

SUPPORTING FAMILY CAREGIVERS PROVIDING COMPLEX CHRONIC CARE: IMPLICATIONS FOR NURSING

Impact of Medical/Nursing Task Performance on Well-Being of Informal Caregivers

Victoria F. Keeton, MS, RN, CPNP-PC, CNS, Doctoral Student¹

Jonathan Trask, MS, RN, CCRN, Doctoral Student¹

Emily O'Shaughnessy, MS, RCEP, Doctoral Student¹

Robin Whitney, PhD, RN, Assistant Professor²

Janice Bell, PhD, MPH, MN, Associate Professor¹

¹*Betty Irene Moore School of Nursing, University of California, Davis*

²*University of California, San Francisco*

Background: Almost 40 million individuals in the U.S. provide unpaid, informal care for adults, and this number is likely to increase. Over half of informal caregivers perform medical/nursing tasks for their adult recipients, often without adequate training. Little is known about the impact of these activities on caregiver wellness. More research is needed to inform caregiver medical/nursing task training programs that will have positive impact on caregiver well-being.

Aims: The current study draws from a large, nationally representative sample of informal caregivers to 1) examine associations between medical/nursing task performance and caregiver well-being, and 2) identify socio-demographic and caregiving factors associated with well-being among those performing medical/nursing tasks.

Methods: We used the *Caregiving in the U.S. 2015* survey (n=1,248), to examine associations between performing medical/nursing tasks and caregiver reports of well-being, controlling for socio-demographic confounding variables. Study variables were described and compared by performance of medical/nursing tasks using chi-square tests. Logistic regression was used to model caregiver emotional stress, physical strain, and high level of burden as a function of medical/nursing task performance, choice in caregiving, and other covariates. In a sub-analysis, we also used logistic regression to model the same three well-being outcomes in models restricted to task performers, using reported difficulty in performing medical/nursing tasks and choice in assuming the caregiving role as the independent variables. Survey weights were applied to account for the complex sampling design.

Results: Overall, 58% of respondents performed medical/nursing tasks. A higher percentage of caregivers performing medical/nursing tasks felt that they did not have a choice in becoming a caregiver as compared to those who did not perform medical/nursing tasks (55% vs. 43%; $p = <0.001$). Caregivers who perform medical/nursing tasks rated their well-being significantly worse than those who do not perform medical/nursing tasks, including: emotional stress (89% versus 77%), physical strain (27% versus 9%), and high level of burden (79% versus 33%; $p < 0.001$). Caregivers who perform medical/nursing tasks compared to those who did not had higher odds of emotional stress (OR=2.35; 95% CI: 1.64, 3.41), physical strain (OR=3.24; 95% CI: 2.23, 4.7) and high caregiving burden (OR=6.09; 95% CI: 4.54, 8.15). Among task performers, difficulty in performing medical/nursing tasks was associated with higher odds of emotional stress (OR=8.61; 95% CI: 4.47, 16.51), physical strain (OR=3.94; 95% CI: 2.37, 6.56), or high level of burden (OR=2.14; 95% CI: 1.39, 3.31). Caregivers who perform medical/nursing tasks who felt they did not have a choice in being a caregiver were also at higher odds of reporting emotional stress (OR=1.92; 95% CI: 1.04, 3.56) or physical strain (OR=1.81; 95% CI: 1.18, 2.76).

Implications for Practice: Caregivers who perform medical/nursing tasks are at greater risk for stress, strain, or burden, especially if they find medical/nursing tasks difficult or did not have a choice in becoming a caregiver. These findings suggest the need for meaningful conversations with health care providers about caregiver willingness and ability to take on caregiving, particularly when medical/nursing tasks are involved. Interventions may also be needed to assure adequate training to support task performance.

SUPPORTING FAMILY CAREGIVERS PROVIDING COMPLEX CHRONIC CARE: IMPLICATIONS FOR NURSING

Exploratory Study of Nurse Perspectives on Their Work with Family Caregivers

Karen M. de Sola, PhD(c)
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA

Elena O. Siegel, RN, PhD
Associate Professor
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA

Kristen Bettega
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA

Purposes/Aims: The purpose of this study was to explore perspectives and practices of nurses to identify family caregivers and support their caregiving role.

Rationale/Background: As the largest segment of the healthcare workforce, nurses are an important source of training and information for families affected by serious illness, although few nurses receive specific training on caregiver support. Time spent educating caregivers on medical and nursing tasks, providing disease and treatment information, and offering emotional support is not usually protected or accounted for in patient care planning, leaving nurses without specific guidance or organizational support for this work. We sought to better understand how nurses approach caregiver support. Understanding current practice can inform the development of tools and resources for nurses in their ongoing work with family caregivers.

Methods: We used an exploratory survey design to collect qualitative data from a convenience sample of nurses (n=18) practicing in a variety of roles and across acute, ambulatory, home, and hospice care settings. The online survey included a series of open-ended questions covering the following topics: observed needs of family caregivers; observed challenges among health care providers in supporting and engaging family caregivers; strategies used to identify, assess, and evaluate caregivers; how a formal assessment of caregiver preparedness would or would not be helpful; and a general question soliciting additional thoughts and suggestions on the topic of supporting caregivers. We used content analysis to analyze participant responses across topics and identify patterns and themes..

Results: When asked about observed caregiver needs, most participants (89%) cited family caregiver difficulties learning medical and nursing tasks. Fifty percent of participants highlighted the emotional needs of caregiver(s) as they cope with stress, competing demands, grief, and a new caregiving role. Time constraints (of both provider and caregiver) were the most commonly mentioned challenge to supporting and engaging caregivers (41% of participants). Across the survey responses, participants reported adult learning strategies they use and training they would like to receive concerning effective teaching of medical and nursing tasks to caregivers who are sometimes distressed and sometimes coping with their own illnesses. Participants described a range of strategies for identifying caregivers, assessing preparedness, and evaluating ongoing caregiving. Our results suggest that educational skills for teaching medical and nursing tasks to family caregivers is an area of need among nurses.

Implications: This exploratory study provides pilot data for future investigation into nurses' work with family caregivers, particularly into the clinical skills used to identify, assess, evaluate, and train caregivers, and the conditions under which nurses use different skills to meet caregiver needs. Results of this investigation will guide future study into organizational and educational support for nurses as they in turn support family caregivers.

Abstracts of Podium Presentations

ADVANCES IN ADULT HEALTH RESEARCH

ADVANCES IN ADULT HEALTH RESEARCH

Mediating Effects of Intervention Following Implantable Cardioverter Defibrillator

Ana Carolina Sauer Liberato, RN, MS, PhD Candidate
Cynthia M. Dougherty, ARNP, PhD, FAAN, Professor
Elaine A. Thompson, PhD, RN, Professor
Biobehavioral Nursing and Health System
University of Washington
Seattle, WA

Purpose/Aims: Approximately 100,000 persons with heart failure or cardiac arrhythmias receive an implantable cardioverter defibrillator (ICD) each year in the U.S. Post-ICD implant recovery requires multiple lifestyle changes, including acquisition of knowledge regarding living safely and successfully with the ICD, implementation and self-monitoring of routine exercise, and learning to manage feelings of depression and anxiety that can markedly influence the recovery trajectory.

Interventions to improve physical and psychological outcomes post-ICD implant focus on four general approaches: education and support, cognitive behavioral therapy, stress management, and Internet-based interventions. Few intervention programs are based on social-cognitive theory, and none have included the patient's significant other in the intervention. The purpose of this study is to test the mediating effects of four dimensions of self-efficacy (self-efficacy expectations, self-efficacy management behaviors, outcome expectations, and ICD-specific knowledge for self-care) on the relationship between the intervention and patient physical function and psychological adjustment following completion of the intervention at 3 months, and at 12-month follow-up.

Methods: This is a secondary study based on data from a randomized clinical-trial that compared two intervention: Patient+Partner (P+P) vs. Patient-Only intervention (P-only). This analysis uses data collected at hospital discharge, 3 and 12-months post-ICD implantation. Physical function was measured using the Patient Concerns Assessment (PCA), and SF-36 subscales (physical-function, role physical-function, and bodily-pain). Psychological adjustment was assessed using the State-Trait Anxiety Inventory (STAI), The Physician Health Questionnaire-9 (PHQ-9) and SF-36 mental health subscales (mental-health, role-emotional, and social-function). Structural equation modeling (SEM) with multiple indicators is being used to test for the posited mediating effects of the components of self-efficacy on physical and psychological outcomes.

Results: Participants were primarily male and white with a mean age of 64.14 (11.90). Mean EF was 34.08(14.33) with ICD implanted for primary and secondary prevention against cardiac-arrest. Regarding physical function, mean values of baseline SF-36 indicators were: physical-function 55.03(24.92), role-physical function 31.02(38.01), bodily-pain 63.27(25.30), and PCA 55.34(39.14). Indicators of psychological adjustment were: SF-36 mental-health 75.78(19.36), role-emotional 69.10(39.62), social-function 70.14(26.57), STAI 31.28(10.74), and PHQ-9 5.11(4.51).

Analyses are underway to examine the potential mechanisms by which the self-efficacy components mediate the effects of the intervention on the measured physical and psychological outcomes. The initial measurement model has been fit and confirmed, indicating strong loadings SF-36 mental-health 0.65, role-emotional 0.74, social-function 0.77, STAI -0.73, PHQ-9 -0.85, SF-36 physical-function 0.62, role-physical 0.73, body-pain 0.66 and PCA -0.93 for the multiple indicators. Analyses of the structural model are being staged to examine the individual as well as joint effects of components of self-efficacy in addition of the effect of the intervention on those mediators.

Implications: This detailed examination of hypothesized intervention mechanisms will advance understanding of the processes by which self-efficacy based self-management, delivered by professional nurses, works to build the confidence and behavioral competence necessary for effective self-care, leading to reduced psychological distress, increased physical function, and overall improvement in the quality of life. The findings will also provide methodological guidelines for nurse researchers interested in evaluating processes inherent in theory-based interventions with the use of robust statistical methods.

ADVANCES IN ADULT HEALTH RESEARCH

Awareness of Heart Disease Risks and Knowledge Gap in Korean Americans

*Cha-Nam Shin, PhD, RN
Assistant Professor
College of Nursing and Health Innovation
Arizona State University
Phoenix, AZ*

Purpose: The purpose of this study was to evaluate awareness of heart disease risks and knowledge of heart disease symptoms among Korean American adults.

Background: Heart disease is the leading cause of death in the United States. Although a significant progress has been made in reducing mortality from heart disease over the past decades, racial/ethnic disparities in heart disease have persisted. As one of the efforts to eliminate these disparities, federal and professional organizations have promoted awareness of heart disease in general populations. However, little is known about awareness of heart disease in minority ethnic groups, including Korean Americans.

Methods: A prospective, cross-sectional design study was conducted in a sample of 100 Korean American adults residing in the southwestern United States. We used the heart disease awareness questionnaire developed by the American Heart Association. Data were analyzed using descriptive statistics, chi-square, and logistic regression. SPSS 25 software was used for the statistical analyses with values of $p < .05$ being statistically significant.

Results: The sample was 64% female, 92% married, with a mean age of 51 (± 7.7), mostly college educated (17 ± 3.8 years of education), but 21% had no health insurance. Participants were more likely to identify cancer than heart disease as the leading cause of death for women (76% vs. 6%, $p < .001$) and for men (49% vs. 29%, $p = .003$). Most of the participants (93%) reported no discussion about heart disease with their healthcare providers, while half of them reporting that they were not at all informed about heart disease in women (57%) or in men (38%). Typical warning signs of heart attack such as chest pain or tight chest were more likely to be identified than atypical signs such as nausea (58% vs. 26%, $p < .001$). Participants more likely to call 9-1-1 first if someone else than themselves experienced signs of a heart attack (63% vs. 24%, $p < .001$). Awareness of heart disease, warning signs, information from healthcare professionals, need to call 9-1-1 were different between demographic groups (e.g., age, gender, education), but they were not statistically significant ($p > .05$). Individuals with no health insurance were more likely to fail identifying typical warning signs (chest pain/tight chest) of a heart attack (OR = .744, 95% CI = .559 to .990, $p < .42$).

Implications: Compared to the national data, the rates of heart disease awareness (30-56% vs. 6%), knowledge of warning signs of a heart attack (67% vs. 58%) and need to call 9-1-1 (81% vs. 63%) in this study sample were far lower and suboptimal. These gaps suggest educational efforts should target Korean Americans, in particular, who do not have health insurance. Nurses and other healthcare professionals should look for all opportunities to discuss heart disease risks, typical and atypical warning signs of heart attack, and the need to call 9-1-1 with their patients. Future research exploring factors related to awareness of heart disease in diverse racial/ethnic groups will continue to build our understanding, which may contribute to closing gap in heart health disparities.

ADVANCES IN ADULT HEALTH RESEARCH

Comparison of Patient Perception of Fall Risk and Standardized Fall Risk Screen

*Nicole D. Pena, PhD(c), MSN-Ed, PCCN,
University of San Diego Hahn School of Nursing and Health Science
Beyster Institute for Nursing Research
San Diego, CA*

Purpose: The purpose of the study was to examine the relationship between patient perception of fall risk and standardized fall risk screening.

Background: Despite mandated government regulations and multiple hospital interventions, falls are the most prevalent adverse event among hospitalized patients. Falls affect over 13 hospitalized adults per 1000 patient days and are the leading driver of health care costs, amounting to over 30 billion of dollars each year with projections to double by 2030. Extant research has identified risk factors associated with falls, i.e., age, mobility, cognition, vision, incontinence, history of falls, medications, and environment, which standardized screens incorporate and drive fall prevention strategies; nonetheless patient falls continue. Recently, perception was identified as a major component in preventing falls. There is a dearth of research examining the relationships between patient's perceived risk for falls, personal characteristics, and standardized hospital fall screens. This study was guided by The Health Belief Model and Social Model.

Methods: A descriptive correlational design with a convenience sample of 201 inpatient adults, aged 65 and older screened as a high fall risk > 11 Johns Hopkins fall risk score (JHFRS), was recruited and enrolled from medical surgical units in an urban Magnet designated Southern California hospital, July to September 2018. After providing informed consent, participants completed Twibell, Siela, Sproat, and Coers (2015) measures of perception of fall risk: Confidence Scale (CS), Fear Scale (FS), Intention Scale (IS), and Consequences Scale (CONSEQS), scored on a 5-point Likert scale. Data analysis included descriptive and inferential statistics. Bivariate analyses examined relationships between perception scales, demographics, clinical characteristics, and JHFRS group.

Results: The sample (n=201) was diverse (61.7% Caucasian, 16.4% Black, 15.9% Hispanic, 2.5% Asian, 3.5% Other), 91.5% English speaking, and 8.5% Spanish speaking. Mean age 77.1 ± 7.9 (range 65-99). JHFRS mean 14.5 ± 3.4 ; 45 scored in the 75th percentile of high fall risk (score >16). Confidence was the only perception scale significantly associated with fall risk ($r = -0.194$, $p = .006$). ANOVA and Chi-squares indicated significant relationships between 75th percentile high fall risk and CS ($F = 4.32$, $p = .039$), Central Nervous System (CNS) agents ($\chi^2 = 5.45$, $p = .020$), admission diagnosis of pain ($\chi^2 = 11.15$, $p = .001$), CVA ($\chi^2 = 5.042$, $p = .025$), fall ($\chi^2 = 17.96$, $p < .001$), fracture ($\chi^2 = 8.68$, $p = .003$), Heart Failure ($\chi^2 = 7.003$, $p = .008$); Primary diagnosis of fracture ($\chi^2 = 16.30$, $p < .001$) and fall ($\chi^2 = 14.26$, $p < .001$); JH mobility assessments-gait ($\chi^2 = 7.39$, $p = .007$), mobility-sensory ($\chi^2 = 16.72$, $p < .001$), cognition-awareness ($\chi^2 = 10.631$, $p = .001$), cognition-impulsive ($\chi^2 = 16.74$, $p < .001$), and cognition-understanding ($\chi^2 = 16.97$, $p < .001$).

Implications: Study findings indicate patient perception of confidence is inversely associated with 75th percentile of high fall risk. In contrast CNS agents, admission diagnoses of pain, CVA, fall, fracture, heart failure, decreased cognition, mobility, were associated with the 75th percentile of high fall risk score (>16). Further research is warranted to examine perceptions related to fall risk screening in other settings and factors related to perception to accurately identify patients at risk for falling. This can lead to individualized fall prevention programs and interventions, thus leading to decreased morbidity, mortality, healthcare cost, and improved patient outcomes.

Funding: Provided in part by the University of San Diego Hahn School of Nursing and Health Science Dean's Research Scholar Award.

ADVANCES IN ADULT HEALTH RESEARCH

Employment Outcomes Measurement after Critical Illness: A Systematic Review

Han Su, MSN, RN, PhD Student

*Hilaire Thompson, PhD, RN, ARNP, CNRN, AGACNP-BC, FAAN, Professor
University of Washington School of Nursing
Seattle, WA*

Purposes/Aims: The systematic review aimed to review and critique available literature regarding returned to work (RTW) outcome measurement following critical illness measures and to give recommendations for future studies.

Rationale/Conceptual Basis/Background: At 5-years post-discharge nearly one-third of previously employed ICU survivors have never RTW. This represents substantial lost earnings and contributes to increased non-direct health care costs. Moreover, the meaning of employment is not merely about financial benefits, but is essential to one's identity and self-esteem by providing a sense of dignity and opportunity for societal participation. Conversely, prolonged unemployment has been found to lead to isolation, loss of self-respect, and poor quality of life. Prolonged unemployment is also linked to poor health and higher mortality. Variations in how RTW is defined and how related outcomes are measured exist and may complicate interpretation of the results and conclusions.

Methods: A systematic literature search in PubMed, EMBASE, CINAHL Complete, and PsycINFO from 1/1/2000 through 4/29/2018 with predetermined eligibility criteria was undertaken. Two researchers independently reviewed all citations and articles identified from the literature searches. Titles and abstract review followed by complete articles review was conducted to identify the final studies for inclusion. The data extraction was performed by the first author, using a data form that included publication year, country, data on participants (e.g., age, gender, critical ill parameters), methods, and outcome measurement(s) (e.g., return to previous employment, RTW with modifications, unable to sustain work after returning, never RTW,). A second reviewer verified papers for accuracy extracted data. Disagreements at all stages of the selection process were resolved by consensus. We used the modified Newcastle Ottawa Scale (NOS) to assess the quality of nonrandomized studies. Studies having less than 3 points being identified as representing at high risk of bias.

Results: A total of 2812 citations were screened. We identified 29 articles which explicitly defined the RTW outcomes in ICU survivors. Returned to work following critical illness is often measured as a dichotomous outcome which represents as "returned yes/no" at a certain follow-up point. Additionally, time to return to work, sustainability of RTW or work maintenance/durability, median sick leave among the working ICU patients, income loss, state financial support, self-report work productivity, vocational status, and job modification are other aspects of assessing ICU survivors' employment situation.

Implications for Translation to Practice/Further Research: Return to work is a dynamic process where ill workers are progressing through multiple phases, encompassing a range of actions, and interacting with micro, meso, as well as macrosystem around them towards RTW. As workers following critical illness move from different recovery stage to stage or interact with different systems, different goals need to be accomplished. Thus it is essential to use outcome measurements that correspond to goals over time. Future studies might aim to facilitate comprehension and consistency of factors and different RTW outcomes at different levels and stages. All the above could contribute to early vocational rehabilitation planning and work-site environmental support.

ADVANCES IN ADULT HEALTH RESEARCH

The Accelerometer-Measured Physical Activity and Fatigue in Older Women

*Yan Su, MS, RN
PhD in Nursing Science Student
School of Nursing
University of Washington
Seattle, WA*

*Oleg Zaslavsky, PhD, RN
Assistant Professor
School of Nursing
University of Washington
Seattle, WA*

Purposes: Our objectives were (1) to describe objectively determined sedentary time (ST), low light physical activity (LLPA), high light physical activity (HLLPA) and moderate to vigorous physical activity (MVPA) and their associations with fatigue in community-dwelling older women; (2) to examine whether the association between the objectively measured physical activity and fatigue is moderated by BMI and lower body physical performance; (3) to evaluate whether a reallocation of physical activity to sedentary time relates to change in fatigue.

Rationale: The mechanism of fatigue is not fully understood. One hypothesis is that fatigue might be triggered by a physiological decline in aerobic capacity that commonly occurs because of an age-related loss of skeletal muscle mass. The reduced aerobic capacity may negatively affect spontaneous physical activity and is further compounded by the presence of obesity and poor lower body function. Sedentary behavior also independently relates to function in older individuals. Because replacing sedentary time with physical activity might have salutary effects on fatigue and because avoiding sedentary behavior might be more practical than adding more intense activities it is useful to investigate tradeoffs in physical activity fatigue context.

Methods: 5448 participants from the Women's Health Initiative Long Life Study (WHI LLS) were included. Outcomes were overall fatigue scores and its energy and weariness subdomains. Linear regressions, with three outcomes, were constructed to examine their associations with ST, LLPA, HLLPA, and MVPA exposure separately (single), while mutually adjusting exposure variables for each other (partition) and by using Isotemporal substitution models (ISM). ISM simulates trade-offs in substituting one type of physical activity for another for the equal amount of time while holding the total time constant. The interactions between BMI, lower body physical performance and physical activity variables were also explored.

Results: The average age (SD) was 78.8 (6.6) and 51.3% were White. During waking hours, on average women spent 188.9 (49.6) min per day in LLPA; 98.6 (35.05) in HLLPA, and 51.1 (34.6) in MVPA and 555.3 (98.74) in ST. Reallocation of 1 SD of MVPA to ST was associated with 2.53% (95% CI=1.57, 3.48) improvement in overall fatigue. Similarly, reallocation of 1 SD of LLPA and MVPA to ST was associated with 2.1% (95%CI=0.83, 3.47) and 3.62% (95% CI=2.3, 4.96) respective improvement in energy. Reallocation of MVPA was associated with 1.65% improvement (95%CI=0.69, 2.56) in weariness. Transitioning from low to high MVPA yields higher salutary impact on energy/fatigue scores in lower functioning individuals than in their more robust counterparts.

Implications for Translation to Practice/Further Research: Physical activity is a significant and modifiable factor of fatigue in older community-dwelling women. We showed that engagement in LLPA and MVPA at the expense of ST might have positive effects on fatigue and its subdomains. The MVPA associations were especially pronounced in women with low function suggesting greater benefits. Pending further research, one cautious public message is that older women should engage in physical activity as a way of counteracting the age-related decline in vitality.

ADVANCES IN ADULT HEALTH RESEARCH

Changes in ADL/iadl Pre- and Post-Home Health Care Services among Patients with Heart Failure

*Youjeong Kang, PhD
Xiaoming Sheng, PhD
College of Nursing
University of Utah
Salt Lake City, UT*

Purpose: To assess changes in pre and post home health care services with telehealth among patients with heart failure

Background: Heart failure (HF) is one of the leading causes of 30-day rehospitalization. To prevent 30-day rehospitalization, a demand for home health care services has increased for homebound HF patients who are at high risk for rehospitalization. Home health care agencies report patients' outcomes to Centers for Medicare and Medicaid Services such as changes in functional status (i.e. activities of daily living (ADL) and instrumental activities of daily living (IADL)). The status of ADL and IADL are assessed pre- and post-home health care services using the home health care electronic health record (EHR) Outcome Assessment Information Set (OASIS). However, there is a lack of knowledge in whether ADL and IADL improve with Home Health. This study will assess changes in ADL/IADL pre- and post-home health care services among patients with HF.

Methods: This study is a secondary data analysis of the OASIS C version that was collected from January 1, 2011 to August 31, 2013 at a large home health care company. Demographic data on 494 HF patients were explored with descriptive statistics. Our target variables were nine ADL items (grooming, dressing upper body, dressing lower body, bathing, toilet transferring, toilet hygiene, and transferring, ambulating and feeding or eating), and two IADL items (planning and preparing meals, and using telephone). We conducted ANOVA to compare ADL at admission and change of ADL from admission to discharge between different facilities. IADL at admission and change of IADL from admission to discharge were compared using non-parametric Kruskal-Wallis test due to non-normal distributions. SAS™ 9.4 version was used for data analysis.

Results: The majority of patients were female (57%), White (83%) and older than 65 years (88%). Median age was 80 years. About 75% of patients had been discharged from a short-stay acute hospital. At home health admission, 70% of the function status was the option of minimum assistance but the highest percentage of bathing and ambulating was the option of assistance of another person. Change in ADL and IADL scores from admission to discharge were both statistically significant (mean change of ADL -0.22 with 95% CI -0.23 to -0.20, t test $P < 0.0001$; median change of IADL -0.23 with interquartile range -0.25 to 0.00, sign test $P < 0.0001$ due to non-normal distribution).

Implications for Translation to Practice/Further Research: The results of this study show that the majority of patients had improvement in ADL/IADL at the time of discharge from home health care services. Further research is needed to create a self-functional management tool at home after home health care discharge for patients to be able to remain optimal functional ability.

Abstracts of Podium Presentations

ADVANCES IN PHYSIOLOGICAL RESEARCH

ADVANCES IN PHYSIOLOGICAL RESEARCH

Factors to Consider When Determining a Target Venous Thromboembolism Prophylaxis Rate

Matthew Carrick, MD, FACS
Trauma Medical Director
Medical City Plano
Plano, TX

Erica Sercy, MSPH
Clinical Epidemiologist
Trauma Research, LLC
Denver, CO

Alessandro Orlando, MPH
Vice President of Clinical Research,
Clinical Epidemiologist
Trauma Research, LLC
Denver, CO

David Bar-Or, MD, FACEP
Director
Trauma Research, LLC
Denver, CO

Purpose: To determine rates of venous thromboembolism (VTE) before and after implementation of an intervention to increase VTE prophylaxis administration among trauma patients.

Background: Currently accepted clinical practice is to prevent VTE among at-risk patients via prophylaxis. However, chemical prophylaxis increases a patient's risk of bleeding, necessitating balancing risks and benefits. Because a patient's risks of VTE and bleeding can frequently change, assessments are necessary when initiating or discontinuing prophylaxis. Nurses have an important role in assuring these assessments are performed regularly and that prophylaxis is correctly administered. It is generally thought that VTE prophylaxis rates among hospitalized patients are too low; however, nurses have previously reported perceiving that prophylaxis is often ordered unnecessarily and regard prophylaxis administration as optional, even when ordered. Consensus among the clinical team is critical to ensure standardized prophylaxis administration practices.

Methods: An intervention was implemented at a Level 1 trauma center in 2015 comprising a daily set time during which all patients on the trauma service were reviewed by the multidisciplinary care team to decide whether prophylaxis should be initiated in newly admitted patients and those previously admitted but not receiving prophylaxis. In this way, all patients were given a standard daily VTE prophylaxis assessment; no such standard assessment protocol was in place previously. Rates of VTE were examined in 2-year periods before and after implementation of the intervention. Associations between the intervention and VTE were analyzed by univariate (chi-square and two-tailed student's t tests) and adjusted logistic regression analyses. Number needed to treat (NNT) analyses were used to determine the number of patients needed to be administered prophylaxis to prevent one additional VTE. SAS 9.4 was used for all analyses.

Results: A post-intervention prophylaxis administration rate of 72.1% was achieved, but rates of VTE were not significantly different between the pre- and post-intervention periods (deep vein thrombosis: 1.0% versus 1.0%, $p=0.85$; pulmonary embolism (PE): 0.6% versus 0.5%, $p=0.68$; fatal PE: 0.09% versus 0%, $p=0.19$). The intervention was not significantly associated with VTE in logistic regression models adjusted for patient age, Glasgow Coma Scale score, Injury Severity Score, and bleeding- and clotting-related comorbidities. In the NNT analyses, 2,840 patients were exposed to our intervention during the 2-year post-intervention period, which prevented three additional VTEs.

Implications for Translation to Practice: Because increasing VTE prophylaxis administration has potential complications, including increased bleeding risk and unnecessary administration in low-risk patients, the number of patients needed to treat to result in substantial reductions in VTE should be carefully considered when determining whether to increase prophylaxis rates. In NNT analyses using our own and previously reported data, we calculated that the NNT to prevent one additional VTE was drastically different depending on the starting incidence of VTE, ranging from 10 to 200,000 patients. In facilities with low VTE incidence, such as ours, the benefit of preventing one additional VTE may be outweighed by the potential harms of over-administration. Future efforts should aim to identify low-risk patients that can be treated with ambulation or mechanical compression rather than chemical prophylaxis.

ADVANCES IN PHYSIOLOGICAL RESEARCH

Comparison of Resuscitative Fluid Effects after Muscle Injury and Hemorrhagic Shock

*Barbara S. Schneider, PhD, RN
Professor, School of Nursing
University of Nevada, Las Vegas
Las Vegas, NV*

*Liyuan Zhang, PhD
Postdoctoral Scholar*

*Julia Soulakova, PhD
Associate Professor
Burnett School of Biomedical Sciences
University of Central Florida
Orlando, FL*

*Charles C. Caldwell, PhD
Professor
Department of Surgery
University of Cincinnati
Cincinnati, OH*

Aims: This study had two aims. One aim was to compare the effects of lactated Ringer's solution (LRS) or a solution of 6% hetastarch in lactated electrolyte injection (HEX) on blood and muscle leukocyte populations after a crush muscle injury with hemorrhagic shock. A second aim was to compare the effect of these fluids on indicators of muscle recovery.

Background: In austere situations where blood products to treat hemorrhagic shock are scarce, first responders may intervene using alternative resuscitative fluids such as LRS or HEX. However, both treatments have disadvantages and contraindications. For example, in combat environments, adequate resuscitation using LRS requires medics to carry extensive volumes of solution. Furthermore, LRS has been associated with activating the immune system, resulting in a systemic inflammatory response. While resuscitation with HEX requires less solution than LRS, HEX is associated with coagulopathies and renal injury. Therefore, determining which fluid is appropriate for certain injuries is critical to ensure patients recover quickly and completely.

Methods: Sixty-seven anesthetized male C57BL/6 mice underwent a closed crush injury of the right quadriceps femoris and gastrocnemius (calf) muscles. Immediately after injury, all mice underwent left femoral artery catheterization. Blood was removed from 44 mice until the mean arterial pressure of each mouse was lowered to 25–40 mm Hg. This pressure range was maintained for approximately 60 min. These mice then received LRS ($n = 22$) or HEX ($n = 22$) until the mean arterial pressure returned close to baseline, until the pressure surpassed 59 mm Hg, or for no more than 30 min. The other 23 mice were assigned to a SHAM group and remained anesthetized and catheterized for no more than 60 min. All mice were euthanized approximately 1.5, 4, or 8 days postinjury. Blood for flow cytometry leukocyte assays was withdrawn at the time of euthanasia. Muscles for flow cytometry leukocyte assays, morphology, and regeneration analyses were harvested after euthanasia.

Results: The mean number of white blood cells and blood monocytes was significantly higher in LRS mice compared to SHAM mice at 4 days postinjury. The number of CD68+/Arg-1+ macrophages in the plantarflexor muscles of the HEX group (mean = 3.0, standard error = 1.6) was higher than the LRS group (mean = 1.2, standard error = 0.8) at 8 days and approached significance (two-tailed, $p = .06$). A hematoma was observed on the majority of muscles for all groups. However, one third of the muscles of the HEX mice exhibited a dark hematoma, whereas less than one tenth of the muscles of the other two groups exhibited this type of hematoma. In addition, twice as many mice in the HEX group continued to demonstrate early-stage regenerating fibers in muscle at 8 days postinjury compared to mice in the LRS group.

Implications: These findings suggest that muscle recovery is slower following resuscitation with HEX compared to LRS. Therefore, when blood products are unavailable, HEX may not be an adequate alternative resuscitative fluid for patients who sustain both muscle injuries and excessive hemorrhage.

Funding and Other Funder Required Information: The U.S. Army Medical Research Acquisition Activity, 820 Chandler Street, Fort Detrick MD 21702-5014, is the awarding and administering acquisition office of this research. This work was supported by the Assistant Secretary of Defense for Health Affairs through the Joint Warfighter Medical Research Program under Award No. W81XWH-16-1-0150. Opinions, interpretations, conclusions, and recommendations are those of the author and are not necessarily endorsed by the Department of Defense. In conducting research using animals, the investigators adhere to the laws of the United States and regulations of the Department of Agriculture.

ADVANCES IN PHYSIOLOGICAL RESEARCH

Relationship of Stress to Cortisol during Pregnancy: The Moderating Role of Gestation

*Sarah Richoux, RN
UCSF School of Nursing
San Francisco, CA*

*Sandra Weiss, PhD, RN, FAAN
Professor and Eschbach Endowed Chair
UCSF School of Nursing
San Francisco, CA*

Background: Previous research suggests that stress during pregnancy can have many adverse effects on birth outcomes. Both self-report and cortisol have been used to assess women's stress during pregnancy. However, studies have rarely examined whether reports of perceived stress and cortisol values actually measure similar correlated phenomena. Understanding the relationship of these measures during the 3rd trimester is particularly important in light of the dynamic hormonal milieu that exists in this stage of pregnancy.

Purpose: The purpose of this study was to determine the relationship between women's reported stress and various cortisol parameters during the third trimester of pregnancy, including overall cortisol concentration, cortisol awakening response (CAR), and the pattern of cortisol secretion across the day (diurnal slope and area under the curve).

Methods: This study involved an analysis of selected initial data from a larger ongoing cohort study. Fifty-eight women between 24 and 34 weeks gestation completed the Perceived Stress Scale to assess their stress over the past month. Sixteen saliva samples were also collected from each of the women across 2 days and assayed for their cortisol values. Cortisol scores for overall mean, CAR, diurnal slope, and area under the curve (AUC) were computed. Pearson correlation coefficients were calculated to examine the relationship between perceived stress and these cortisol values.

Results: Women were ethnically diverse and ranged in age from 23 to 47 ($M = 35.4 \pm 4.8$). The average score for perceived stress was $14.88 \pm .88$, with a possible total score of 40. For the total group, women's perceived stress was not related to any of the cortisol parameters. Because of changes that occur in hormonal secretions over the course of pregnancy, we examined women who were in the earlier stage of their 3rd trimester and those closer to parturition as separate groups. For women who were 29 weeks or less in gestation, there was a negative correlation between perceived stress and overall mean cortisol ($r = -.37, p < .05$), and a positive correlation between perceived stress and both CAR ($r = .37, p < .05$) and AUC ($r = .42, p < .05$). Women at 30 weeks of gestation or more showed no relationship between self-reported stress and cortisol.

Discussion and Implications: In contrast to a lack of any relationship for women later in gestation, cortisol and perceived stress showed robust relationships of medium effect size for women earlier in their 3rd trimester. This point in pregnancy has been recognized as a time of significant hormonal fluctuation in cortisol, estrogen, progesterone, and other steroids. But the complex nature of these changes to perceived stress has not been well studied. Our findings suggest that any flux in cortisol during this time may be substantially affected by psychological stress and that cortisol is closely linked to self-report in the early 3rd trimester. Results also indicate that measures of both self-report and varied cortisol parameters are needed when assessing stress during pregnancy since they may tap different facets of stress at different times of gestation. It may be particularly unwise for investigators to rely solely on self-report or cortisol mean values.

Funding: NIH grants to S.J. Weiss (PI) - RO1 HD081188 and T32 NR016920 (Biobehavioral Research Training in Symptom Science).

ADVANCES IN PHYSIOLOGICAL RESEARCH

Associations of Hormonal Biomarkers with Infant Health and Development

June Cho, PhD, RN

Associate Professor

School of Nursing

University of Nevada, Las Vegas

Las Vegas, NV

Diane Holditch-Davis, PhD, FAAN

Professor Emeritus

School of Nursing

Duke University

Durham, NC

Xiaogang Su, PhD

Professor

Mathematical Science

University of Texas, El Paso

El Paso, TX

Aims: To exam how hormonal biomarkers such as testosterone and cortisol levels are associated with health (physical growth, technology-dependent, common health problems) and development (cognitive, motor, language, and socioemotional) of very-low-birthweight (VLBW, BW < 1,500gm) infants during the 2 years after birth.

Background: The occurrence of preterm birth rose again from 9.6% in 2015 to 9.8% in 2016. Not surprisingly, very low birthweight (VLBW; birthweights less than 1,500 gm) infants have more health and developmental problems than normal birthweight (NBW) infants, and these problems are more common in male VLBW preterm infants. According to *theories* of gender-difference and extreme male brain, the exposure to elevated prenatal testosterone levels appears to be a contributing factor for problematic neurobehavioral development. One of the *rationales* for selecting this androgen hormone was that testosterone levels are higher in males and almost 9 times higher in VLBW than NBW infants. As the end product of HPG and HPA, testosterone and cortisol, play a crucial role during brain development, we chose both steroid hormones for study.

Methods: Forty VLBW infants were recruited from a NICU of a tertiary medical center in the Southeast US. Mothers were asked to visit with the infant to the newborn follow-up clinic when the infant became 6, 12, and 24 months. Data were collected through medical examination by pediatrician or occupation therapist/physical therapist, interview with mothers by the research nurse, questionnaires completed by mothers, developmental assessment by a certified psychologist, and biochemical measurement of salivary testosterone and cortisol levels using enzyme-immuno assays (EIA) at 6, 12, and 24 months by a lab technician who was blinded for infant information.

Results: Means of infant birthweight and gestational age were 1,026 gm and 29 weeks. We use mixed linear models as the main analytical method to examine how testosterone and cortisol levels were associated longitudinally with infant health and development. Testosterone levels decreased from 6 to 24 months. All physical growth parameters increased, whereas infant socioemotional problems decreased with time. Testosterone levels were inversely associated with body weight, length, and head circumference at all time-points studied. Neither testosterone nor cortisol levels were associated with other health (technology-dependent and common health problems) or developmental (cognitive, motor, language, and socioemotional) problems. Testosterone levels were positively correlated across 3 time-points, whereas the levels of testosterone and cortisol were positively correlated at 24 months.

Discussion: The hormonal biomarkers provided a better predictor for this vulnerable population as elevated testosterone levels were associated with delayed physical growth during the 2 years after birth. Although hormonal cascades of HPG and HPA are similar in infants, cortisol levels were not associated with any infant outcomes. No association between these hormones and developmental outcomes possibly occurred because the 24-month time period was too short to accurately identify subtle aspects of development emerging in childhood. Measuring health and developmental outcomes beyond 24 months may provide additional data to serve as an empirical basis for understanding the functions of these hormones and lead to the development of interventions.

Funding: This study was supported in full by NICHD, NIH (R01-HD076871) to the first author.

Abstracts of Podium Presentations

**ADVANCING MATERNAL
AND NEWBORN HEALTH**

ADVANCING MATERNAL AND NEWBORN HEALTH

Kangaroo Mother Care and Energy Conservation in Preterm Neonates

*Dorothy Forde, RNC-NIC, PHD
dorothy.forde@ucsf.edu*

Purpose: To examine the impact of one hour of kangaroo mother care (KMC) on energy utilization and oxidative stress in preterm infants.

Background: Premature infants in the NICU are at high risk of suffering from early maternal separation due to their physiological and metabolic immaturity.

Methodology: Randomized controlled trial (RCT) of preterm infants (24-36 weeks gestation) examined effects of 1-hour of KMC (n = 26) or 1-hour incubator care (n = 25) on day of life (DOL) 3 and 4. Urine samples, collected 3-6 hours before, and 3-6 hours after, each treatment were analyzed with respect to energy utilization markers hypoxanthine (Hx), xanthine (Xa), and uric acid (UA), and with respect to oxidative stress marker allantoin.

Data Analysis: Urine concentrations of Hx, Xa, and UA, were measured using high performance liquid chromatography (HPLC), and allantoin was quantified using gas chromatography-mass spectrometry (GC-MS). A mixed model analysis of variance (ANOVA) was conducted with an unstructured covariance matrix adjusted using the Bonferroni method.

Results: Lower allantoin levels ($p = 0.026$) were observed in newborns after KMC treatment compared to those cared in the incubator. Similarly, xanthine and uric acid were lower following KMC ($p = 0.042$, $p = 0.031$, respectively) over time.

Conclusions: These results suggest that energetic demands and oxidative stress processes are decreased following KMC. This represents a linkage of biochemical data to the theorized physiological benefits of KMC.

ADVANCING MATERNAL AND NEWBORN HEALTH

Daily Cannabis Use during Pregnancy and Parenthood

Celestina Barbosa-Leiker, PhD
Associate Professor
College of Nursing
Washington State University
Spokane, WA

Ekaterina Burduli, PhD
Assistant Professor
College of Nursing
Washington State University
Spokane, WA

Crystal Ledershos Smith, MS
PhD Student
Prevention Science
Washington State University
Spokane, WA

Maria Gartstein, PhD
Professor
Department of Psychology
Washington State University
Pullman, WA

Purpose: With the legalization of recreational cannabis use in 2012 in WA State, the landscape of cannabis use has changed. In order to educate pregnant women regarding cannabis use, we needed to understand the current perceptions of harms and benefits of cannabis use during pregnancy.

Background: Cannabis use during pregnancy has significantly increased in the last 20 years, increasing 62% from 2002 to 2014. In the past 40 years, the potency of Δ^9 -tetrahydrocannabinol (THC) increased 6- to 7-fold, and in the past 10 years the potency in the US has doubled. Guidelines from the American College of Obstetrics and Gynecologists state that women should not use cannabis during preconception, pregnancy, and lactation. Women who used cannabis while pregnant are at greater risk of stillbirth compared to non-substance users. Prenatal exposure to cannabis is related to significant behavioral/emotional consequences in older children (impulsivity and hyperactivity, depression, aggression, and inattention). Longitudinal studies from the 1970s-90s may underestimate more significant harms from current cannabis use.

Methods: We recruited pregnant and postpartum women who self-reported using cannabis daily or occasionally while pregnant or postpartum. We used a qualitative descriptive methodology using an interview guide. Common themes were identified in the data.

An audit trail was kept throughout the analysis process to document decisions and next steps. Interviews lasted 30-60 min and participants were given a gift card to thank them for their participation.

Results: Saturation occurred with N=14 pregnant women. Cannabis use across the sample was on average 3 times/day (“a small bowl” or “a few hits off a joint”). The overarching theme was identified as, “Taking care of mom and baby” as participants spoke of cannabis use to take care of their own medical issues so that they could take care of their baby. We identified 5 themes: Continued use for medicinal purposes (using for morning sickness/nausea, using to manage pain), use in moderation (reducing use during pregnancy, using as a safer alternative to opioids), mixed messages (healthcare providers offering a vast array of inconsistent information, being stigmatized from healthcare providers), wanting more information (frustration over the lack of research on the topic, getting medical information from workers in cannabis shops), and individuality (having comorbid conditions, various lifestyles from homelessness to middle class, advocating for individual decisions).

Implications: Patient education regarding cannabis during pregnancy can be improved when we consider environment, comorbidities, and lifestyle of pregnant patients that use cannabis (i.e., periconception medicine). We need to ask why a pregnant woman is using cannabis, not simply if a pregnant woman is using cannabis. Healthcare providers can help manage expectations regarding pain during pregnancy and help treat other comorbid conditions. We also need to manage healthcare providers’ expectations of cannabis use based on patient history. As more states continue to legalize the recreational sales of cannabis, we need to rethink patient education to reduce any harmful effects it may have on the mother and baby.

Funding: The study received financial support from Washington State University Alcohol and Drug Abuse Research Program (PI Barbosa-Leiker).

ADVANCING MATERNAL AND NEWBORN HEALTH

Biobehavioral Adaptation to Life Course Stress in Pregnant Women

Crystal Modde Epstein, PhD, MSN
Post-Doctoral Scholar, School of Nursing
University of California, San Francisco
San Francisco, CA
crystal.epstein@ucsf.edu

Julia Houfek, PhD, APRN-CNS, Professor, University of Nebraska Medical Center
Carol H. Pullen, EdD, RN, Professor, University of Nebraska Medical Center
Michael J. Rice, PhD, APRN-NP, FAAN, Professor, University of Colorado Anschutz Campus
Sharon J. Hammer, MD, Assistant Professor, University of Nebraska Medical Center
Jeffrey A. French, PhD, Professor, University of Nebraska at Omaha
Kevin Kupzyk, PhD, Assistant Professor, University of Nebraska Medical Center

Background: Exposure to early adversity (EA) is linked with altered physiologic stress response and higher incidence of depression over the life course. In pregnant women, both EA and depressive symptoms are associated with altered maternal regulation of the stress hormone cortisol. Modifiable protective factors such as coping strategies have been shown to reduce the psychological symptoms of EA and depression, but it is unknown whether coping strategies could also buffer the *physiologic* effects of EA and depressive symptoms on women's cortisol during pregnancy.

Purpose: The purpose of this descriptive study was to examine whether women's coping during pregnancy moderates variations in cortisol associated with EA and depressive symptoms. Specific aims were to 1) determine which coping strategies used by pregnant women are associated with EA and depressive symptoms, and 2) test whether coping strategies moderated the effects of EA and depressive symptoms on diurnal cortisol patterns.

Methods: Women (N = 65) with singleton, uncomplicated pregnancies (mean gravid = 26.5 weeks) completed the Stress and Adversity Inventory, Edinburgh Depression Scale, Brief Cope and collected salivary cortisol five times per day for three days to measure diurnal cortisol patterns. Data were analyzed using Spearman correlations and linear regression, controlling for maternal age and smoking.

Results: EA was positively correlated with greater use of behavioral disengagement ($\rho = .26$, $p = .03$), while depressive symptoms were positively correlated with greater use of all coping strategies except support seeking. In turn, support seeking moderated the relationship between depressive symptoms and evening cortisol. Elevated depressive symptoms were associated with higher evening cortisol, but not among women who sought support as a coping strategy (Adjusted $R^2 = .32$, $\beta = -.90$, $t = -2.59$, $p = .01$). No coping strategies moderated the effects of EA on diurnal cortisol patterns.

Discussion: Use of behavioral disengagement among women with EA may reflect dissociative symptoms associated with trauma exposure, functioning as a learned behavioral adaptation for coping with overwhelming stress. Among depressed women, low use of support seeking is emblematic of depressive tendency towards isolation and withdrawal. Women's ability to seek support buffered the high evening cortisol levels associated with depression. These findings suggest that nursing interventions targeting depressed women's support seeking during pregnancy may render protective effects on the physiologic stress response. More research is needed on whether other modifiable factors could attenuate the effects of EA on the physiologic stress response.

Implications: Together, these findings advance knowledge on how biopsychosocial factors converge to influence the health of pregnant women, which may have important implications for birth and developmental outcomes for offspring.

Funding: First author was supported by the National Institute for Nursing Research (F31NR016176; T32NR016920) and a Presidential Fellowship from the University of Nebraska Medical Center.

ADVANCING MATERNAL AND NEWBORN HEALTH

The Effectiveness of Prenatal Care in Reducing Racial Disparities in Birth Outcomes

Holly Thurston, PhD, MSW
Senior Research Analyst
Sacramento County Public Health
Sacramento, CA

Bronwyn Fields, RN, MPH, PhD
Assistant Professor
California State University Sacramento
Sacramento, CA

Jamie S. White, MPH
Epidemiology Program Manager
Sacramento County Public Health
Sacramento, CA

Aim: To examine the effectiveness of early and adequate pre-natal care in reducing racial disparities in pre-term birth among low-income females in Sacramento County, California.

Background: Preterm birth (PTB) is the leading cause of infant mortality. Persistent racial disparities exist in birth outcomes, with the rate of PTB 50% higher in non-Hispanic black women than in non-Hispanic white women. PTB is associated with inadequate prenatal care (PNC); women with inadequate PNC have been found to have twice the odds of PTB compared to women with adequate PNC. However, it is unclear whether PNC has an effect on reducing racial disparities in PTB. Nurses, including nurse practitioners, play a key role in providing care to pregnant women during traditional prenatal care visits, and through innovative additional approaches such as the Nurse Family Partnership home visiting program.

Methods: The study population included low-income Black and White female residents of Sacramento County with a singleton live birth from 2013-2016. The primary outcome of interest was racial disparities in PTB. Exposures of interest were first trimester entry into prenatal care and Adequacy of Prenatal Care Utilization Index (APCUI). Maternal residential proximity to nearest Comprehensive Perinatal Services Program (CPSP) was calculated using ArcGIS 10.3. Bivariate analyses were performed for PTB by race. Binary logistic regression was performed, controlling for maternal age, smoking status and racial segregation. Attributable risk of PTB for no or late entry into PNC, and percent difference in PTB by race and PNC status were calculated. Statistical analyses were performed using SAS 9.3. P-values less than 0.05 were considered significant.

Results: The study population included 14,950 low-income females (4,982 Blacks, 9,968 Whites). Blacks were more likely to enter PNC in the first trimester (76.3%) and to have adequate APCUI (84.2%) than Whites (70.7% and 81.5%, respectively). However, PTB was higher for Blacks (10.7%) than Whites (8.5%). Compared to females with early PNC, the adjusted odds of PTB for females with late or no entry into PNC was the same for Blacks and Whites (OR = 1.4). Attributable risk of PTB for no or late entry into PNC was lower for Blacks (32.2%) than Whites (39.4%). The percent difference between Blacks and Whites with PTB was greater for women with first trimester PNC (34.0%) than for those without (28.2%). Blacks lived closer to a CPSP (1.7 miles) than Whites (2.1 miles) on average.

Implications: While adequate PNC decreases risk of PTB for both Blacks and Whites, this study did not show evidence that PNC has an impact on reducing racial disparities in PTB. Early and adequate PNC is necessary but not sufficient for eliminating racial disparities in PTB. County efforts to provide access to PNC for low-income Black females should be maintained. However, additional prevention and intervention strategies must be employed to further reduce racial disparities in birth outcomes. Expansion of evidence-based, comprehensive nursing interventions shown to reduce preterm birth, such as the Nurse Family Partnership home visiting program, could contribute to these efforts.

Abstracts of Podium Presentations

**ALTERNATIVE APPROACHES
IN NURSING EDUCATION**

ALTERNATIVE APPROACHES IN NURSING EDUCATION

RN to BSN Students' Experiences with Asynchronous Audio-Video Discussion Responses

*Vicki L. Denson, PhD, MSN, CNE
Assistant Clinical Professor
College of Nursing
Washington State University
Vancouver, WA*

*Leslie M. Shurts, PhD, MSN
Nursing Director
Silver Consolidated Schools
Silver City, NM*

Purpose/Aims: The purpose of this study was to explore RN to BSN students' experiences with audio-video (AV) discussion responses in asynchronous online discussion forums.

Rationale/Background: Literature suggests that interactivity in online programs can lead to student satisfaction and social presence. The use of asynchronous AV online discussion forums represents one learning strategy in which students can interact with peers and offer insight into various topics through sharing of clinical experiences and gathering evidence-based information to support their responses. In a previous quantitative study, these researchers discovered that although RN to BSN students reported satisfaction with asynchronous AV discussion responses being positive, accurate and free flowing, students also reported increased levels of discomfort when participating in AV discussions. Thus, this qualitative study was a follow-up to the previous quantitative study to further explain the findings which appeared to negatively impact social presence when AV discussion responses were required.

Methods: This qualitative descriptive study recruited a convenience sample of 14 RN to BSN students enrolled in an online program at a southwestern university school of nursing. All students had previously taken at least two courses requiring asynchronous AV discussion responses. After obtaining IRB approval, students were invited to complete an online survey consisting of four basic demographic items and three open-ended questions related to audio-video discussion responses. Students were asked to discuss what they liked and disliked about the AV format, as well as how they felt the format impacted their learning experience. An inductive content analysis approach was used to organize the qualitative data by open coding, creating categories and abstraction

Results: The researchers completed independent coding of the data using the abstraction process. The data classification of each independent coder matched with three main categories identified: 1) technology and time as barriers, 2) distress, and 3) forming distinct impressions of others.

The results suggest that while some students found value in using AV responses in asynchronous online discussion forums related to forming distinct impressions of other course participants, many students expressed distress related to technology issues, the format being time-consuming, as well as feeling discomfort in seeing ones-self in the videos. The qualitative data from this sequential study provided explanation for the previous quantitative findings for social presence in which students reported use of AV responses decreased their comfort levels with participation. Our findings with the population of RN to BSN students is congruent with other studies in the literature which have focused on different student populations related to use of audio or audio-video responses.

Implications: These results suggest that faculty must continue to explore students' experiences with AV discussion responses as they seek to develop innovative teaching strategies, which will build a sense of community, social presence, and satisfaction with asynchronous discussion forums. Future studies could investigate the provision of student choice in using AV or text-based responses in asynchronous discussion forums to further improve communication satisfaction and social presence while meeting the unique needs and learning preferences of each student.

ALTERNATIVE APPROACHES IN NURSING EDUCATION

The Active Learning Fellowship: A Program for Faculty Development

Elizabeth Rice, PhD, PMHNP-BC
Associate Dean of Clinical Education & Practice
Betty Irene Moore School of Nursing, UC Davis
Sacramento, CA
eirice@ucdavis.edu

Purpose: The purpose of this presentation is to demonstrate how a targeted faculty development project for teaching in an active learning classroom was implemented.

Aims:

1. Establish how active learning may be expanded through faculty development.
2. Understand how to design active learning workshops through collaboration.
3. Develop an understanding and appreciation for methods of teaching beyond lecturing.
4. Identify the challenges and benefits of teaching in an active learning environment.

Rationale/Background: Institutions of higher education have seen a strong and growing interest in improving the implementation of active learning teaching practices. Both faculty and students report that active learning approaches can improve learning experiences and educational outcomes. Active learning has been described as learning that occurs when students are actively engaged and have a stake in their own educational process. The focus is not on the teachers as the 'expert' and center of the classroom experience, but as a guide to learning. For health professional students, this type of learning translates into the development of a nurse with more highly developed critical reasoning skills. Despite significant evidence that active learning is effective, there is limited guidance in how to provide faculty with the tools to change their teaching. Faculty may be reluctant to change due to concerns about student evaluations, additional workload and lack of experience engaging students to work more independently.

Brief Description: Faculty development for new teaching initiatives and practices can be challenging due to competing demands on faculty time and scheduling difficulties. This project was an effort to develop a series of active learning workshops for a designated small group of full-time faculty who have varied amounts of experience with active learning. Five Active Learning Fellows were chosen by the Dean of the School and provided with computer tablets to enhance their teaching. A partnership was developed between the School of Nursing and the Center for Educational Excellence to design five workshops that included both didactic elements and time to complete a mandatory classroom project to develop an active learning student experience. This project was required to be adapted into a health professional class within six months of completion of the fellowship. Additionally, a graduate student worked with the Active Learning Fellows to develop a resource site for active learning teaching practices.

Outcomes Achieved: Evaluations of the Fellowship were qualitative and completed with an online survey. Responses were primarily very positive in terms of the learning gains from the workshops, biggest challenge noted with scheduling. One Fellow stated, "*I was skeptical about active learning because I thought it was just another teaching fad, but having the expertise of the teachers from CEE really changed my thinking. I think all faculty should attend these workshops*". Fellows presented their classroom projects to all interested faculty in the School in a series of brown-bag lunch sessions. To change our teaching practices to enhance nursing education, faculty need to be provided with the educational tools to effect change.

Funding: Song-Brown Grant: #16-7781.

ALTERNATIVE APPROACHES IN NURSING EDUCATION

Expressions of Emancipatory Knowing in Undergraduate Nursing Service-Learning

*Heather C. Voss, PhD, RN
Assistant Professor of Clinical Nursing
Oregon Health Science University
Ashland, OR*

Purpose: This study was conducted to more fully understand emancipatory knowing in undergraduate nursing student service-learning by exploring how it was expressed in written reflections during service-learning experiences and how the expressions were applied in clinical situations eight months after the service-learning experience.

Background: Emancipatory nurses recognize social and political problems of injustice or inequity and participate in social and political change to improve people's lives. The recent spotlight on relationships among health, health inequity, social determinants of health, and structural institutional barriers demand that nurse educators integrate curricular and pedagogical strategies that analyze and address root causes of social and health inequity. Emancipatory knowing is a critical framework for preparing professional nurses for practice and leadership in today's complex healthcare environment. What emancipatory knowing *looks like* and *how it is expressed* have not been explored in nursing education or service-learning research.

Method: A qualitative sequential mixed-method design guided the study. Written reflections from fifteen baccalaureate nursing students who participated in a service-learning experience early in their senior year were analyzed for expressions of emancipatory knowing. Eight semi-structured interviews were conducted to explore the application of the expressions to clinical situations eight months after the service-learning experience. Interpretive description methodology was used to analyze both the reflection and interview data. Interpretive description is a critical comparative analytical process that moves beyond taking ideas apart and reassembling them; it pushes the researcher to learn and see beyond hunches and toward new ways of how data might fit together.

Results: Five expressions of emancipatory knowing were derived from the student reflections on service-learning: gaining understanding, critiquing, uncovering new truths, creative processes, and personal knowing. Four themes of how emancipatory knowing was applied in nursing practice subsequent to the service-learning experience were identified from the interview data: taking a step back, looking behind the scenes, peeling back the onion, and knowing resources. The findings of this study provide insight into what emancipatory knowing looks like in nursing students who participated in service-learning, and suggest an early domain that extends the current emancipatory knowing model for application in nursing education.

Implications for Nursing Education: Understanding how emancipatory knowing is expressed in the professional formation of nursing students informs pedagogical approaches that facilitate emancipatory knowing concurrent with nursing's values and that are critical to professional nursing in current and emerging healthcare environments. The expressions of emancipatory knowing reported in this study guide nurse educators in the development and evaluation of curriculum and clinical experiences that promote health and social equity as an outcome of nursing education and emancipatory nursing as a professional competency.

ALTERNATIVE APPROACHES IN NURSING EDUCATION

Exploring How Mentoring Prepared Adjunct Clinical Instructors for Decision-Making

*Karen A. Ripley, PhD, RN
Assistant Professor
Nursing
Loma Linda University School of Nursing
Loma Linda, CA*

Purpose: A shortage of qualified full-time faculty in nursing education has led to the use of part-time, adjunct clinical instructors who are novices to academia with little to no mentoring for their decision-making role regarding student progress, yet are expected to be competent with teaching, supervising, assessing, and evaluating students.

Rationale/Background: Past literature has suggested that a lack of information and poor mentoring have contributed to difficulty with decision-making, particularly when the situation has involved an unsafe or unfit for practice student. Few studies exist that examine mentoring of adjunct clinical instructors through the ethical decision-making process.

Methods: The hermeneutic phenomenological study was focused on an exploration of the experiences of adjunct undergraduate clinical instructors with mentoring while asking the research question: How does mentoring prepare undergraduate adjunct clinical instructors for ethical decision-making? Participants included seven females and one male, all with experience as adjunct clinical instructors. Two participants had extensive mentoring, while the remaining had a brief introduction to paperwork or a one-day orientation. Data were analyzed using Ricoeur's three-level method of analysis.

Results: Findings indicated that the participants' experiences were consistent with existing literature regarding a lack of knowledge and information, feelings of fear and doubt, and relying on themselves to make decisions. Of the two participants who received extensive mentoring, only one felt competent with decision-making. Unexpected findings emphasized participant lack of power as they recognized the ethics involved with passing unsafe students while assigned failing grades were either downplayed or overturned by course faculty or administration. As a result, clinical instructors identified not wanting to return to the role and actively deterring other nurses from teaching.

Implications: Implications for practice emphasized the need for better student evaluation methods, and improving the collegial relationship within the school of nursing. Development of specific mentoring programs to support novice clinical instructors as they enter their new role and make decisions regarding student progress is necessary. In addition, policies and protocols must be developed regarding the grading and evaluation process in nursing education, and school must address student role in the grading and evaluation process.

ALTERNATIVE APPROACHES IN NURSING EDUCATION

The Flipped Classroom and Nursing Student Engagement

Carlo Parker, PhD, RN
Associate Professor
School of Nursing
University of Northern Colorado
Greeley, CO

Purposes/Aims: This research was conducted to determine if using the flipped instructional method compared to traditional lecture has an effect on nursing student engagement. The research question was, *will the flipped classroom method compared to lecture method effect nursing student engagement in the learning process?* The Flipped classroom method changes the way instruction is delivered. Lectures are video recorded for the students to view prior to coming to class. The students work on the lower level concepts like understanding and meaning prior to class. In class the instructor actively engages in the material with the students, focusing on the higher-order activities like applying, analyzing, evaluating and creating. This increases meaningful contact time between the student and instructor. Students come to class and apply the material to real word situations.

Rationale/Conceptual Basis/Background: Student engagement has been defined by Kuh as “quality of effort and involvement in productive learning activities”. Critical thinking, considered a key ability required to be successful as a nursing student and as a practicing RN, is linked positively in the literature to student engagement. The lack of nursing student engagement is correlated to course failure and dropping out. There is evidence that engagement in nursing students is lower than in other healthcare professions. Low nursing student engagement may indicate future problems with hospital retention related to clinical performance of registered nurses. Nursing is facing an ongoing workforce shortage that threatens the U.S. healthcare system’s functioning. Retention of RNs in the workplace is a key issue facing healthcare organizations and nursing leaders. Increasing engagement in students and RNs with the learning process offers the potential to address the issues mentioned here.

Methods: A quantitative non-experimental repeated measures design was utilized to determine the effect of class delivery method on nursing student engagement. Engagement was measured using the Student Course Engagement Questionnaire (SCEQ). SCEQ is a valid and reliable 23-item Likert tool. Nursing students (N=65) in their junior year taking a nursing research class participated this study. The questioner was completed at the beginning of the class based on previous lecture method classes and at the end of the flipped class based on experiencing the flipped class. None of the students reported having experienced a flipped class prior to this study.

Results: A dependent group’s t-test was used to analyze the data (SPSS version 20). Reliability of the SCEQ was checked with Cronbach’s alpha ($\alpha = .74$). There was a significant (two-tailed) difference between student engagement levels ($p < .05$) after taking a flipped class. The mean SCEQ score after ($M = 4.28, SD = .72$) was higher than the score before the flipped class ($M = 4.02, SD = .89$); $t(64) = -2.59$.

Implications for Translation to Practice/Further Research: Educators in both the academic and clinical setting should consider using the flipped classroom as a means to increase student and possible RN engagement in the learning process. Further studies need to be conducted to determine if flipped leaning and increased engagement are correlated with higher level of knowledge and skill retention, as well a workforce retention of RNs.

ALTERNATIVE APPROACHES IN NURSING EDUCATION

First Time Licensure Pass Rates as an Academic Metric: Is It Time for a Change?

Joanne Noone, PhD, RN, CNE, ANEF
Associate Professor
Oregon Health & Science University
School of Nursing
Ashland, OR

Joy Ingwerson, MSN, RN, CNE
Former Policy Analyst
Nursing Education and Assessment
Oregon State Board of Nursing

Amari Kunz, BSN, RN
Graduate Student
Oregon Health & Science University School of Nursing
Portland, OR

Purposes/Aims: The purpose of this study is to describe testing patterns of new RN graduates on the NCLEX-RN in Oregon in order to identify potential licensure metrics other than first time pass rates related to educational quality and entry into the nursing workforce.

Rationale/Background: Successful entry into the nursing workforce for graduates is an outcome for pre-licensure nursing programs. First-time NCLEX pass rates (FTPRs) was a measure developed initially of workforce entry when licensure testing only occurred twice a year. How FTPRs evolved into a metric of pre-licensure educational program quality is unclear; however, it is used in national accreditation standards and by state boards of nursing to assess program effectiveness. Faculty may implement programmatic changes to admission and progression policies based on FTPRs which may impact enrollment, student diversity or pose additional costs to student through implementation of standardized testing. FTPRs may initiate high stakes testing policies. The reliance on FTPRs as a metric for program quality is problematic because there is influence by the individual tester on the outcome. Readiness for testing, testing anxiety, and illness on the day of testing are all individual variations that impact the outcome.

Methods: Testing patterns of new graduates in Oregon who graduated during the period from January 1, 2013 through December 31, 2015 were analyzed to determine number of testing attempts and length of time until successful licensure. Number of testing attempts and length of time until success were reported at three and six month intervals from eligibility to test and categorized in aggregate and according to school (anonymized) attended. Annual pass rates for schools were calculated and school FTPRs below 85% were identified as at risk either for faculty intervention to improve FTPRs or a review by the Board of Nursing.

Findings: There were 4,045 first-time testers in the three-year period. The first time pass rate for testers was 88.6% (n=3583). 96.1% (n=3887) of testers passed by the second try; 98% (n=3964) passed by the third try. 87.6% (n=3545) of testers passed within 90 days of eligibility; 95.3% (n=3854) of testers passed with 180 days. Of the 80 measures of annual school pass rates over the three-year period, seventy-six of the eighty measures (95%) had school pass rates on second attempt above 90% and seventy-eight measures (97.5%) had an annual school pass rate above 90% on third attempt. Of the 80 measures, 18 had school FTPRs of 85% or lower and were identified as at-risk. Of these 18 at-risk measures, 14 (77.8%) had a second time pass rate above 90% and 16 (88.9%) had a third time pass rate above 90%.

Conclusions: It is recommended that second and third time pass rates within a year or pass rates within six months be considered as academic metrics for accreditation purposes. Further understanding of patterns of successful licensure testing and readiness to enter the workforce will assist in selecting reasonable, evidence-based measures to inform curricular and program policies, maximize resource utilization and expenses for nursing students, nursing programs and regulatory agencies.

**CHALLENGES IN NURSING WORKFORCE
RETENTION**

CHALLENGES IN NURSING WORKFORCE RETENTION

Experienced Nurses' Intention to Leave the Bedside

Linda C. Hofmann, PhD, RN, NEA-BC, NE-BC
Assistant Professor
College of Nursing
University of Utah
Salt Lake City, UT

Purpose: The purpose of this study was to explore the phenomenon of nurse intention to leave bedside care with a focus on reasons, causes, and rationales. How experienced nurses determined their career path was also explored. Understanding why experienced nurses leave bedside care, from the nurses themselves, allows for the identification and implementation of positive strategies to support, accommodate, and potentially retain experienced bedside nurses.

Background: Experienced nurses are essential to quality patient care. Their ability to independently practice using the nursing process and acquired skills of critical thinking are invaluable to delivering quality care. Experienced nurses leaving the bedside is a serious and costly problem for healthcare, yet the perspectives of those nurses has not been extensively explored. Many nurses today, just at the point at which they become “experienced,” are also positioned with multiple options for expanded role opportunities or to further their education or find a flexible work position. Not having the specifics as to why a nurse leaves, in a qualitative, descriptive form is not adequate to understand and make changes that could result in retaining the nurse.

Methods: This was a qualitative study using unstructured interviews to engage experienced nurses in order describe rationales for intention to leave the bedside. The state licensee list was utilized to recruit nurses who had been licensed for 3 to 12 years. Participant inclusion criteria required the nurse to have practiced for a minimum of 3 years in direct patient care, (defined as *working in a hospital nursing unit, in homecare or hospice, or in a clinic providing hands-on care to patients*). Thirty-nine nurses were recruited from different healthcare institutions across the state. Of those who participated, the mean age was 30 years-old, with the majority being married (80%); 10% divorced and 10% single. Sixty-nine percent of the participants reported having three or more children, with the average age of the children being 5 years-old, of which approximately 50% were under school age.

Results: Content analysis of study results indicate that family responsibilities and associated personal priorities are the most important factors to the nurse, as they make career decisions to leave or stay in nursing positions or to advance their career. Career-path decisions and job changes to move away from the bedside were heavily influenced, and overshadowed by frequent scheduling conflicts and the lack of consideration by employers with regard to the nurse’s family obligations. Particularly overwhelming to the nurse was inflexible scheduling and the number of work hours required to maintain part-time or full-time employment. Employers were unwilling to reduce or flex the nurses’ work hours which resulted in a “tipping point” and a work-family conflict, pushing the nurse to consider her intention to leave or to actually leave the bedside.

Implications: Employers and healthcare leaders may use these findings to intervene and prevent resignation of the nurse. This information can provide insights for strategic workforce planning and can serve to facilitate organizational planning to support nurse career pathing and stabilization of experienced nurses at the bedside.

CHALLENGES IN NURSING WORKFORCE RETENTION

Healthy Work Environments: Essential to Decreasing Burnout

Lesly Kelly, PhD, RN

Assistant Professor

College of Nursing and Health Innovation

Arizona State University

Phoenix, AZ

Karen Johnson, PhD, RN

Research Director

Banner Health

Phoenix, AZ

Michael Todd, PhD

Professor

College of Nursing and Health Innovation

Arizona State University

Phoenix, AZ

Purpose: Building on previous findings, this study examined associations in critical care nurses with healthy work environment (HWE) standards, burnout, secondary trauma (STS), and compassion satisfaction (CS) across an entire health system.

Background: The Critical Care Societies Collaborative raised awareness of the crisis of healthcare burnout and its potential harm to clinicians, patients and organizational outcomes.¹ Over half of critical care clinicians suffer from burnout syndrome.² Research points to strong connections among characteristics of nurses' work environments and outcomes for nurses (communication, teamwork, safety) and patients,³⁻⁶ yet little is known about relationships between nurses' professional quality of life (burnout, STS, CS) and work environment conditions. The multisite study reported here examined associations of American Association of Critical Care Nurse's (AACN) Healthy Work Environment Assessment (HWEA) standards with burnout, STS, and CS.

Methods: Full and part-time critical care nurses from 24 intensive care units in 12 hospitals in the southwest United States were invited to complete an electronic survey. Measures consisted of demographics, the Professional Quality of Life Instrument, and the AACN HWEA. A survey link was emailed to eligible participants and made available for three weeks. Data collection was supported through a research assistant at staff meetings and rounding, leadership support, and incentives.

Results: Excluding incomplete and duplicate cases yielded an analytic sample of 766 nurses. Respondents, on average, had 9.27 years of nursing experience and 4.23 years tenure on their unit. Approximately 18% reported having at least one job outside of the health system and working an average of 16 hours/week outside the system. Of note, nurses reported responding to an average of two patient deaths a month. We used multivariable linear mixed models to examine associations between nurses' reports of burnout, STS, and CS and each HWE component separately, and then considered all six HWE measures simultaneously predicting each outcome variable, adjusting for background covariates and unit-level clustering. Considering each HWE measure separately, HWE was negatively related to burnout and STS ($ps < .001$) and positively related to CS ($ps < .001$). Associations of HWE with burnout (regression coefficients [bs]= -3.53 – -2.99) and CS ($bs = 2.74 – 3.50$) were stronger than HWE-STS associations ($bs = -1.60 – -1.37$). Effective decision making was the HWE measure most strongly related to all outcomes. In analyses considering all HWE measures simultaneously, burnout was negatively related to appropriate staffing and meaningful recognition ($ps < .001$); STS was negatively related to appropriate staffing ($p = .015$); and CS was positively related to effective decision making ($p = .033$), appropriate staffing ($p = .008$), and meaningful recognition ($p < .001$).

Implications: This large-scale system-wide study is the first to yield strong evidence of the relationship between the HWE and burnout, STS, and CS. Despite continued emphasis on HWEs, nurses' appraisal of their work environment has declined in recent years.⁷⁻⁸ In addition to demonstrating evidence for supporting autonomy for nurses through decision-making, this study further demonstrates for leaders that meaningful recognition is an evidence-based practice for decreasing burnout and fueling compassion satisfaction.

Funding: Funded by American Association of Critical Care Nurses Impact Grant.

CHALLENGES IN NURSING WORKFORCE RETENTION

Antecedents and Consequences of Presenteeism in Nursing

Jessica G. Rainbow, PhD, RN
Assistant Professor
College of Nursing
University of Arizona
Tucson, AZ

Purpose/Aims: The aim of this study was to examine the fit of the proposed conceptual model of the relationships between presenteeism, its antecedents, and its consequences, among hospital RNs who provide direct patient care.

Rationale/Conceptual Basis/Background: Nurses have been identified as a high-risk group for presenteeism, which is when one is present at work but not fully engaged or performing. Presenteeism occurs due to multiple work environment (e.g. teamwork and management), personal (e.g. stress and work-life balance), and health factors. Consequences of presenteeism include increased patient falls, medication errors and missed care, in addition to negative nurse and organizational consequences. However, a model that accounts for the multiple antecedents that lead to presenteeism, as well as the consequences of presenteeism, is lacking. Based on literature from nursing, business and occupational health, we adapted a model of presenteeism antecedents and consequences. In this model, we hypothesize that presenteeism is a mediator between these antecedents and consequences.

Methods: A nationwide cross-sectional online survey of 447 RNs providing direct patient care on inpatient hospital units was conducted between August 2017 and February 2018. Nurses were recruited through hospital organizations, nursing organization listservs, and social media. The survey included reliable and validated measures of presenteeism, and its antecedents and consequences. Antecedent measures included perceived stress, work environment, professional values, health, and work-life balance. Consequence measures included professional quality of life, missed care, and turnover intent. Structural equation modeling was used to estimate the relationships and model fit.

Results: Participants came from 40 states, and the majority (44%) worked dayshift, worked with adult and older adult populations (60%), and worked at hospitals with over 400 beds (40%). In the last month, 39% of participants reported working overtime. The majority of participants were Caucasian (92%), female (94%), and had a bachelor's degree (66%). Model fit was good with fit parameters of $\chi^2 = 13.69$, $df = 7$, $p = 0.057$; RMSEA = 0.054, CFI = 0.996, SRMR = 0.012, TLI = .959, and AIC: 9,998.93. Significant antecedents of presenteeism included work environment, professional value, perceived stress and work-life balance. Higher perceived stress and lower work-environment, professional value, and work-life balance were all linked with higher presenteeism. Significant negative consequences of presenteeism included lower professional quality of life, higher turnover intention, and more missed patient care. Presenteeism was also a mediator between multiple antecedents and turnover intent, missed care and professional quality of life.

Implications: Presenteeism in nursing is significantly linked to multiple individual and work environment factors. The consequences of presenteeism affect patients, hospital organizations and nurses. Nurse leaders should consider presenteeism and its associated consequences when making decisions about employee policies (e.g. mandatory overtime). We currently lack understanding of nurses' awareness of their own potential presenteeism during a shift, and nurse decision-making regarding work attendance when performance may be impacted. Further research to address these gaps is needed before interventions to address presenteeism can be developed.

Funding: This presentation was supported by the National Institute for Occupational Safety and Health Grant #T42/OH008672. Its contents are solely the responsibility of the author and do not necessarily represent the official views of NIOSH. Jonas Philanthropies also supported this work.

Abstracts of Podium Presentations

COMMUNITY HEALTH CONUNDRUMS

COMMUNITY HEALTH CONUNDRUMS

I-CAN: A Community Based Program Improving Health Outcomes and Reducing Costs

*Katherine Bradley, PhD, RN
Associate Professor
OHSU/PSU School of Public Health
Oregon Health & Science University
Portland, OR*

*Heather Voss, PhD, RN
Clinical Assistant Professor
School of Nursing
Oregon Health & Science University
Portland, OR*

*Nicholas Bookman, MPH
Academic & Experiential Education
Assessment Analyst
OSU College of Pharmacy
Portland, OR*

*Peggy Wros, PhD, RN
Senior Associate Dean, Student Affairs/Diversity
School of Nursing
Oregon Health & Science University
Portland, OR*

*Kate LaForge, MPH
Senior Research Assistant
School of Nursing
Oregon Health & Science University
Portland, OR*

*Launa Rae Mathews, MS, RN
Clinical Assistant Professor
School of Nursing
Oregon Health & Science University
Portland, OR*

Purpose: Too frequently, healthcare systems, education curriculums, and practitioners fail to address social determinants of health (SDH) (e.g., housing instability, food insecurity, etc.) as part of the traditional health care experience. The cost of health care for individuals living in low-resource neighborhoods is disproportionately high due to the negative impact of SDH on their lives, contributing to reduced engagement in preventive care, high incidence of multiple chronic illnesses, and overutilization of Emergency Medical Services (EMS) and the Emergency Department (ED) for care. The Interprofessional Care Access Network (I-CAN) was developed to demonstrate that a community-based, academic practice model could improve outcomes and lower healthcare cost among clients served. **Background:** I-CAN is a nurse-led model for healthcare delivery and interprofessional education addressing the Triple Aim for marginalized populations in urban neighborhoods and rural communities. Piloted in 2013 in two neighborhoods, it expanded to serve clients in six communities across one state. As an interprofessional intervention, student teams are engaged from nursing, dentistry, pharmacy, medicine, nutrition and physician assistant programs. Nursing faculty, specializing in community health, work with community partners and supervise student teams as they provide care coordination to high-risk clients to improve health outcomes and reduce cost of care.

Methods: I-CAN student teams met weekly with clients in their homes to discuss and address unmet social needs, barriers to health, and lack of access to care. Quantitative data were collected at baseline, every 12th visit, and on exit from the program. Data collected include demographics, healthcare utilization, and an inventory focused on social determinants of health, medication, pain management, and mental and oral health. Data from the first five years of the program (2013-2017) were analyzed using a qualitative-quantitative mixed methods design. This evaluation assessed changes in client health, social needs, health care utilization, and cost savings across five neighborhoods. Qualitative data included narrative documentation of student interactions with clients, which were extracted and analyzed using conventional content analysis in Dedoose to assess the intervention impact of the student teams on client outcomes.

Outcomes: In the first 5 years, I-CAN served 406 clients in two urban, two rural and an urban/rural community. Clients were primarily middle aged (39%), 70% had 12 years or less of education, 89% were publicly insured and 33% reported high health care utilization. On entry into the program, 37% of clients lacked a primary care home, 23% lacked stable housing, 20% lacked health insurance and over a third reported high healthcare utilization. Typical healthcare goals included improving dental care, managing chronic disease, and reducing chronic pain. Characteristic SDH concerns were stabilizing housing, food insecurities, and improving transportation access. Clients (N=71) with pre/post data reported reductions in ED visits, EMS calls and hospitalizations resulting in an estimated \$185,000 in cost savings per 6 months.

Conclusions: I-CAN is a scalable model that provides new roles for faculty and students, strengthens community partnerships by adding capacity, and demonstrates that interventions focused on care coordination and social determinants can improve health outcomes while decreasing costs.

Funding: This project was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number UD7HP25057.

COMMUNITY HEALTH CONUNDRUMS

Walkable Neighborhoods and Cognition in Older Adults: A Scoping Review

*Boeun Kim, MSN
PhD in Nursing Science Student
University of Washington School of Nursing
Seattle, WA*

Purpose/Aims: The purpose of this scoping review is to understand the influence of the walkable neighborhoods on cognitive outcomes. The specific aims are to: 1) review the studies that examined the relationships between walkable neighborhoods and cognitive outcomes in older adults, and 2) examine the measures used to determine physical features of walkable neighborhoods.

Background: Many older adults may experience varying degrees of cognitive decline from normal age-related cognitive changes to dementia. Cognitive impairments can adversely impact daily life and well-being. There has been a growing interest in investigating the role of the neighborhood in promoting the cognitive health of older adults. The walkable neighborhood has the potential to be a promising influence on cognitive health. The associations between walkable neighborhoods and cognitive outcomes have been investigated in some studies, however the studies have not been examined collectively. Additionally, the measures used to assess physical features of walkable neighborhoods have not been critically examined.

Methods: A scoping review was determined appropriate since the field is in early stages of development. A literature search was conducted in PubMed, EMBASE, CINAHL, and PsycINFO in 2018 using a pre-specified protocol. A synthesis of the associations focused on consistency across studies, presence of dose-responder associations, effect size, appropriateness of confounders, and evaluation of the measures focused on content validity, structural validity, internal consistency reliability, and hypotheses testing for construct validity (ecommetrical properties for variables were measured at group-level).

Results: A total of eight studies were included. A variety of indicators for walkable neighborhoods were assessed. The most frequently observed attributes of walkable neighborhoods were quantity and quality of community facilities, land-use mix, and a neighborhood disorder index. This review found potentially significant roles for walkable neighborhoods in cognitive health in older adults. Ten out of 17 macro-level walkable neighborhood features were significantly related to cognitive outcomes, and three out of six walkable neighborhood attributes at the micro-level were significantly linked to cognitive outcomes. There were several methodological issues related to research design and measures. Specifically, there was no clear rationale to choose the neighborhood definition, and characteristics of older adults were not considered in the selection of a neighborhood definition. Moreover, measures of walkable neighborhoods are still in a developmental stage, and measurement properties were not reported in most studies included in this review. Even though few articles mentioned content validity, there was a general lack of consideration for the target population (i.e., older adults) and contexts (e.g., urban and rural settings, country, culture).

Implications: Further research is required to conclude the influence of walkable neighborhoods on cognitive health due to the limited number of studies, lack of evidence of dose-response association, small effect size, and lack of control for confounders at neighborhood-level. Neighborhood definitions that account specifically for older adults and older adults with cognitive impairment are needed to clarify this issue. A standard tool for measuring walkable neighborhoods and a standard for evaluating the quality of an instrument are necessary.

COMMUNITY HEALTH CONUNDRUMS

Uranium and Other Heavy Metals in *Cucurbita pepo*

Christine Samuel-Nakamura, PhD
Assistant Professor
School of Nursing
University of California, Los Angeles
Los Angeles, CA

Aims: The purpose of this study was to determine the extent of environmental contamination in a heavily mined area in the most common agricultural crop in an American Indian community in New Mexico (NM). Uranium (U) and associated heavy metals (As, Cd, Cs, Mo, Pb, Se, Th, V) were determined in squash (*Cucurbita pepo*) and the study aims were to: (1) identify dietary behavior in relation to the intake of locally harvested crops, (2) compare U and heavy metal (HM) concentrations in crops from areas known to have high and low levels of U contamination, and (3) disseminate study findings to the Navajo (Diné) leadership and communities.

Background: Diverse communities are disproportionately exposed to hazardous environmental materials by virtue of living in close proximity to toxic waste materials. From the 1940s to the 1980s, northwestern NM alone contributed 40% of the U.S. U production. There remain more than 550 unreclaimed mining sites in the study area. In the Diné community, subsistence farming is highly valued and comprises a substantial portion of today's food intake. Besides consumption, crops are utilized for various medicinal and cultural purposes. Human and animal studies of those exposed to U have shown kidney chemical toxicity and damage to liver, cardiovascular, and nervous systems. Some HMs are teratogens (As, Se) and male reproductive toxicants (Mo, Cs). Other HMs can impair renal function (Cd), cause developmental and nervous system problems (Pb), cause untoward respiratory affects (V) or increase the risk of cancer in high dose exposure (Th).

Methods: Participants were recontacted from the Diné Network for Environmental Health study and were asked to join the current study. New participants were also invited into the study by word-of-mouth, public announcements, tribal *Chapter* house meetings and community events. Two *Chapters* or communities consented to be in the study. Two questionnaires were administered. Data plant and soil concentration levels were determined on a scale of milligrams per kilogram and microgram per liter for irrigation water. Heavy metal concentration levels were derived from squash plants (N=12), and paired with soil and irrigation water samples utilizing Inductively Coupled Plasma-Mass Spectrometry. Geographic Information System data was collected as distance proximity data and sample location information.

Results: In general, mean squash roots and leaves contained greater HM concentration levels than edible squash parts. Cadmium and lead concentrations in irrigation water exceeded the human safety levels. Overall, the edible portion of squash was not contaminated above the calculated recommended Provisional Tolerable Weekly Intake, Reference Dietary Intake, Recommended Dietary Allowance and tolerable upper intake levels.

Implications: Further research is needed with larger crop sample sizes in other mine impacted areas of the community. Existing education regarding safe drinking water use needs to be reemphasized such as using safe water containers. Future research should focus on determining biological contaminant levels in humans who consume crops. Other harvested foods need to be examined collectively and diversification of diet is advised Continued health surveillance and monitoring and recommended.

Funding: Research reported in this publication was supported by the National Institute of Nursing Research (NINR) of the National Institutes of Health (NIH) under Award Number F31NR013102. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. This work was also supported by the University of California, Los Angeles (UCLA) National Institute for Occupational Safety and Health (NIOSH) 2 T42 OH 8412-8, the UCLA Institute of American Cultures Grant (IAC), and the 2011-13 Navajo Nation Grant.

COMMUNITY HEALTH CONUNDRUMS

Disaster Knowledge, Skills, and Preparedness among Military Healthcare Personnel

*CAPT Heather King, NC, USN, CRNA, PhD
Clinical Investigations Department
Naval Medical Center San Diego
San Diego, CA*

*LTJG Natalie Spritzer, NC, USN, BSN
Staff Nurse
Critical Care Department
Naval Medical Center San Diego
San Diego, CA*

*LTJG Nahla Al-Azzeh, NC, USN, BSN
Staff Nurse
Critical Care Department
Naval Medical Center San Diego
San Diego, CA*

Introduction: The Indo-Asia-Pacific region has the highest incidence of natural disasters worldwide with approximately 1.6 billion people affected since 2000. This region is commonly referred to as the “ring of fire” due to the large number of earthquakes, volcanoes, tsunamis, typhoons, cyclones, and large scale floods occurring within and around the basin of the Pacific Ocean. The resulting aftermath of disasters can quickly overwhelm available resources resulting in loss of basic infrastructure, shelter, healthcare, food and water, and ultimately loss of life.

Over the last twelve years, the US military forces have collaborated with countries throughout the Indo-Asia-Pacific region to enhance disaster preparedness and management. Many of these efforts have occurred during shipboard global health engagement missions and have resulted in enhanced international capacity to prepare and respond to disasters. Military healthcare personnel are integral in this effort and have included disaster preparedness subject matter exchanges, formal conferences/courses, and high fidelity simulated military-to-military training exercises.

Military healthcare providers are essential for international education and training and to ensure optimal readiness to respond to future disasters worldwide. Building and sustaining disaster readiness among military personnel is crucial as the ability to effectively respond to disasters and collaborate with other nations promotes international stability. Few studies have examined disaster preparedness among US military healthcare personnel.

Purpose: The purpose of this study was to assess knowledge, skills, and disaster preparedness among US military healthcare personnel preparing to deploy on a global health engagement mission.

Methods: A descriptive, cross-sectional survey to examine self-reported perceptions of disaster preparedness among US military healthcare personnel preparing to deploy on a shipboard global health engagement mission was conducted. Three hundred Medical Corps Officers, Nurse Corps Officers, Dental Corps Officers, Medical Service Corps Officers, and Hospital Corpsman were invited to participate in the study with 154 surveys completed (response rate 51%). Nineteen surveys were excluded from the analysis due to incomplete responses. The Disaster Preparedness Evaluation Tool (DPET) was utilized to examine perceived disaster preparedness knowledge, disaster mitigation and response knowledge, and disaster recovery knowledge. Participants rated responses to forty-six likert items (1-6 scale), and responded to 22 descriptive items.

Results: Mean scores for participants on disaster preparedness, disaster mitigation and response, disaster evaluation, and total DPET scores were 100.6 ± 21.4 , 60.0 ± 15.4 , 23.3 ± 6.6 , and 183.9 ± 39.6 respectively. A backwards step wise regression was conducted. The final regression model had six significant variables which predicted DPET scores: previous disaster drills ($p = 0.00$), experiencing a real disaster ($p = 0.002$), bioterrorism training ($p = 0.02$), education level ($p = 0.025$), years in specialty ($p = 0.019$), and previous global health engagement missions ($p = 0.016$), $R^2 = .39$, $R^2_{adj} = .36$, $F(7, 127) = 12.04$.

Implications: This study identified several areas military healthcare personnel could enhance disaster preparedness: 1) increased involvement in military disaster response policies and guidelines, and 2) additional education on mental health conditions following disasters. This study has expanded the understanding of disaster preparedness among US military healthcare personnel.

Funding: TriService Nursing Research Program, grant # N15-P05.

COMMUNITY HEALTH CONUNDRUMS

“We Want to Build a Network”: Nurse Case Management Services for Military Families

*Abigail Marter Yablonsky, PhD, NP-C
Nurse Research Scientist
Family Nurse Practitioner
Clinical Investigations Department
Naval Medical Center San Diego
San Diego, CA*

*Robyn Martin Englert, MPH
Research Scientist
Health and Behavioral Sciences
Naval Health Research Center
San Diego, CA*

*Renee Dell’Acqua, MPH
Research Associate
Health and Behavioral Sciences
Naval Health Research Center
San Diego, CA*

*Shannon Fitzmaurice, MPH
Research Associate
Health and Behavioral Sciences
Naval Health Research Center
San Diego, CA*

Background: Civilian healthcare systems have adopted client-centered case management models because research has shown that these services positively affect patient and organizational outcomes, including increased patient satisfaction rates, and decreased length of hospital stays. Optimizing case management (CM) services within the military health system has the potential to increase service member readiness, and family readiness, at home and abroad. However, little research has been conducted on CM services provided to military families within the military health system.

Purpose: To identify factors that may impact provision of CM services to military-affiliated children and their families, and to provide recommendations to improve CM services.

Methods: Semi-structured qualitative interviews were used. A total of 53 nurse case managers from U.S. military treatment facilities varying in size, location, and branch of service were interviewed by telephone to explore their perspectives on care delivery to military families. Qualitative content analysis was performed; the research team interpreted the data through the lens of healthcare quality improvement.

Results: Case managers in the military health system serve a variety of functions but specific roles vary between facilities. Five factors which impact CM services provided to military families were identified. These included: 1) Pediatric Specialization (i.e., caring for children was vastly different than caring for adults), 2) Heavy Workload (i.e., patient complexity was not factored into case management staffing decisions), 3) Appropriate Staff (i.e., CM teams of nurses, social workers, and mental health professionals would be beneficial), 4) Patient Handoffs (i.e., there was wide variability in how transfers were accomplished within the military health system), and 5) Role of Case Management (i.e., there was wide variability in how other healthcare team members understood the CM role).

Implications: Recommendations for improving CM services to facilitate the recovery of service members and their families are discussed. Implementation of these recommendations is likely to improve nurse case management services provided to military families. Future research should investigate the perspective of military families on the case management services provided to their children.

Funding/Support: This work was supported by the TriService Nursing Research Program under work unit no. N1508 and grant number N15-P15. Human subjects participated in this study after giving their free and informed consent. This research has been conducted in compliance with all applicable federal regulations governing the protection of human subjects in research (Protocol NHRC.2014.0041).

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Abstracts of Podium Presentations

CONCEPTS IN RURAL HEALTH RESEARCH

CONCEPTS IN RURAL HEALTH RESEARCH

Effects of a FNP Rural Residency on Rural Knowledge, Attitudes and Practice Intention

*Kathleen Schachman, PhD, FNP-BC, FAANP
H.R. Wickes Endowed Chair of Nursing
Department of Nursing
Saginaw Valley State University
University Center, MI*

*Tammy Hill, DNP, FNP-BC
Assistant Professor of Nursing
Department of Nursing
Saginaw Valley State University
University Center, MI*

Purpose: To examine the impact of an innovative Rural Residency program on knowledge and attitudes about rural life, and clinical practice intentions in a sample of family nurse practitioner (FNP) students.

Background: Rural areas experience significant shortages of healthcare providers, as well as unique barriers to care. An understanding of rural health issues and development of the skills necessary to work in rural healthcare systems that are increasingly technology-based are key to preparing FNP students for practice in rural settings. Evidence suggests that rurally-focused training generates interest in rural practice and influences the practice location choice, posing a potential solution to address workforce disparities that plague rural communities.

Methods: This one-year Rural Residency used a framework built upon the graduate-level competencies from Quality and Safety Education for Nurses (QSEN). Using instructional scaffolding, students were first introduced to concepts of rural culture, theory, and practice in an asynchronous online delivery format. To strengthen these concepts, students engaged in rurally-focused simulation activities, using both “virtual patients” and standardized actors in a structured non-threatening environment. Finally, students experienced a 240-hour clinical immersion in a rural clinic, where they applied rural knowledge and skills in a remote practice setting. Technology was infused into all aspects of the Rural Residency, as students were introduced to the “hub-and-spoke” model of telehealth delivery. Through telehealth simulations, students were able to overcome barriers related to access by expanding geographic reach into rural communities. Additionally, telehealth was used in clinical settings to reduce professional isolation, and to build capacity and expertise among rural providers. Self-perceived rural knowledge, attitudes toward rural life and rural clinical practice, and intention to practice in a rural setting were measured in 32 students in their final year of an FNP program (n=14 enrolled in the Rural Residency program; 17 controls, not enrolled in the program) at baseline, and one year later. Repeated measures ANOVAs examined differences in change over time (Group x Time interactions) in rural knowledge, attitudes, and intention to practice in a rural setting among those enrolled and not enrolled in the Rural Residency.

Outcomes: Results from the repeated measures ANOVA showed no significant Group X Time interaction for perceived rural knowledge ($p=.09$); however, there was a significant time effect ($p<.0001$) indicating a significant increase in rural knowledge in both groups. There was a significant Group x Time interaction for attitudes toward rural life and rural clinical practice ($p=.0002$), with a significant improvement among the Rural Residency students ($p=.001$) and a significant decrease in non-rural residency students ($p=.02$). There was no significant Group x Time interaction for intent to practice in a rural setting ($p=.98$).

Conclusions: This Rural Residency has shown promise in positively impacting attitudes toward rural life and rural practice, specifically, students’ perceptions about rural work opportunities, friendliness and support in rural areas, personal and professional isolation, and enjoyable aspects of rural life. Future research examining actual employment locations of Rural Residency graduates is needed to gauge the long-term impacts of this program on the rural healthcare workforce.

Funding: This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under the following grant number T94HP30878, titled *Enhancing Rural Competence Through the SVSU FNP Rural Residency Program*, for \$1,554,244. This information or content and conclusions are those of the authors and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.

CONCEPTS IN RURAL HEALTH RESEARCH

Telehealth: Increasing Access to Mental Health Services for Rural Childbearing Women

Gwen Latendresse, PhD, CNM, FACNM, Associate Professor

ElLois Bailey, DNP, PMHNP, Clinical Instructor

Ann Hutton, PhD, PMHNP, Assistant Professor (Clinical)

Kaitlyn Jones, BSN, RN

Tessa Hamilton, BSN, RN

College of Nursing

University of Utah

Salt Lake City, UT

Purpose/Aims: We discuss a successful statewide project with an overall purpose of increasing access to mental health services for childbearing women in rural communities. The aims of the project were to, 1) implement universal electronic screening for perinatal depression and anxiety (PDA) in three rural public health clinics, 2) provide mental health services via a telehealth platform, and 3) provide PDA-specific training via remote access to health care professionals in these three rural communities.

Rationale/Background: One in five childbearing women suffer from perinatal depression, the most common childbearing complication. There is also an alarming shortage of mental health providers, particularly in rural communities. Telehealth is revolutionizing the delivery of health care services and is a promising platform for delivering perinatal mental health care. A telehealth platform can increase access to mental health services and education to rural communities.

Methods/Process: In collaboration with three rural public health departments, we implemented universal electronic screening for PDA among all pregnant and postpartum women (up to 1 year after birth). Women completed screening using an electronic tablet at the public health clinic, and received on-the-spot interpretation of scores, and information about PDA and available resources (local, state, and national). Women who screened “positive” for depression were invited to join a therapeutic group by videoconference, facilitated by a mental health professional. If needed or desired, individual one-on-one mental health services were also available by videoconference or telephone. Women participated by connecting through Utah Telehealth Network from whatever location they chose (e.g. home), using their own electronic devices (lap top, smart phone, tablet, phone). All urgent mental health issues, including suicidal ideation, were addressed by local clinic staff, and included immediate referral to local mental health professionals (if available) or via telehealth consultation.

Outcomes Achieved: Prior to the project, screening for PDA was nearly nonexistent; and there were no providers with PDA-specific training in these rural sites. During the 9-month project period 356 women were screened and 99 had a positive result. Four groups of 4-6 women completed an 8-week group telehealth program. Some women received individual therapy rather than group. Several women were referred back to local mental health services, if available and appropriate. Notably, several women voiced preference NOT to receive mental health services locally as they were reluctant to receive services by someone in their community who knows them or were afraid of loss of privacy in their small communities, “where everyone knows everyone’s business.” Of concern is the number of women (n=37) who screened positive for perinatal depression but declined to receive any further information or a referral to a mental health professional. Most of these women made statements that appear to reflect a need to maintain their privacy and avoid stigma related to mental health, for themselves and their families within their communities.

Conclusions: At least for these three rural communities, telementalhealth appears to be a promising, effective approach to screening, detecting, and treating PDA.

Funding: Funding through the Utah Department of Health, Utah Telehealth Pilot Project (182700408).

CONCEPTS IN RURAL HEALTH RESEARCH

Exploring Perspectives of Medication-Assisted Treatment for Opioid Use Disorder

*Krista L. Scorson, MS, RN,
PMHNP-BC, PhD Candidate
College of Nursing
University of New Mexico
Albuquerque, NM*

*Kim Cox, PhD, RN, CNM
Associate Professor
College of Nursing
University of New Mexico
Albuquerque, NM*

*Emily Haozous, PhD, RN, FAAN
Research Scientist
Behavioral Health Research Center
of the Southwest
Albuquerque, NM*

*S. Van Roper, PhD, RN, FNP-BC
Associate Professor
College of Nursing
University of New Mexico
Albuquerque, NM*

*Sharon Ruyak, PhD, RN, CNM
Assistant Professor
College of Nursing
University of New Mexico
Albuquerque, NM*

*Leslie Hayes, MD
Family & Community Medicine Physician
El Centro Family Health
Española, NM*

Background: In the United States, more than 2.5 million people struggle with opioid use disorder. Compared to their urban counterparts, rural residents are twice as likely to overdose from opioid misuse. Reasons for this increase include excessive opioid prescribing (6 times greater) and illegal diversion of prescriptions. This holds true in the rural counties of northern NM, where drug overdose deaths are among the highest in the nation. Although medication-assisted treatment (MAT) with buprenorphine, methadone or naltrexone is globally accepted as the most effective treatment, MAT is still accessed half as frequently by rural than by urban dwellers. The reasons for this imbalance are unknown, and there is no information about how the perspectives, knowledge and attitudes of rural individuals seeking MAT may contribute.

Purpose: The purpose of this study was to: 1) explore the perspectives, knowledge and attitudes of individuals in rural NM with opioid use disorder regarding medication-assisted treatment, and 2) describe their experiences seeking medication-assisted treatment.

Methods: A descriptive, qualitative design was used. Twenty participants who had experience with opioid addiction and MAT were recruited by purposeful sampling and interviewed using a semi-structured interview guide. Interviews were digitally recorded and transcribed. Thematic content analysis was used to identify themes and patterns.

Results: Participants described being able to “live a normal” life with MAT because it is legal, prescribed by a provider, reduces opioid cravings and the cycle of drug-seeking behaviors. At the same time, participants felt like they were “still addicted” because of withdrawal symptoms and stigma associated with seeking treatment. Participants described inconsistencies in the policies regulating MAT access and variability in healthcare providers knowledge about opioid use disorder and MAT. There were a number of barriers to accessing MAT including: cost, lack of insurance, inadequate pharmacy supply and long wait-lists to initiate treatment. Participants expressed a strong desire for more education, community support and access to recovery-oriented resources.

Implications: MAT is globally accepted as the most effective treatment for opioid use disorder, decreasing the morbidity and mortality caused by opioid misuse, the spread of needle-borne infectious disease, and the incidence of illegal behavior. Despite the numerous personal and societal benefits of MAT, stigma and public misunderstandings related to MAT persist. Although strategic initiatives have been pursued to expand access to MAT, there are key barriers that prohibit access rurally, including inconsistencies in treatment policy, restricted access and long-waitlists. These barriers perpetuate the problem of drug diversion and self-treatment.

Funding: American Psychiatric Nurses Association Research Grant (KLS).

CONCEPTS IN RURAL HEALTH RESEARCH

Hydration, Sugary Drinks and Kidney Function in California Agricultural Workers

*Sally Moyce, PhD, RN
Assistant Professor
College of Nursing
Montana State University
Bozeman, MT*

Purpose: To estimate the hydration practices of agricultural workers and the impact of sugary drink consumption on the kidneys.

Background: Estimates of fluid intake among agricultural workers during work hours are limited, despite the importance of hydration during strenuous work in the fields, particularly for kidney health. Recent evidence into the etiology of a kidney disease that affects agricultural workers suggests rehydration with drinks containing fructose increases the risk of kidney injury.

Methods: A cohort of agricultural workers in California's Central Valley was recruited during the 2014 and 2015 summer harvests. Questionnaires estimated participant report of fluid intake during the shift, including drinks containing sugar. Serum creatinine measurements were collected both before and after the work shift to estimate kidney function. Differences in mean fluid consumption between men and women were compared using Wilcoxon rank sum tests. Associations of acute kidney injury with total volume consumed, types of drinks consumed, and other health and occupational variables were estimated using step-wise logistic regression models.

Results: In a sample of 573 workers, we found acute kidney injury in 16.4% of workers (62 men and 32 women). Men reported drinking significantly more fluid during the day than women (mean 114.8 ounces vs. 78.9 ounces, $p < 0.01$), but significantly less (relatively) of their intake came from sugar drinks than women (18.3% versus 23.7%, $p < 0.01$). In stratified models, water intake was associated with a slight increase in adjusted odds of acute kidney injury in males but not in females (1.00, 95% confidence interval 1.00-1.01). For females, Gatorade was mildly protective against acute kidney injury (adjusted odds ratio 0.94, 95% confidence interval 0.89-0.99). In pooled models, consuming sugary drinks was not statistically associated with acute kidney injury.

Implications: These findings provide important information about what agricultural workers drink during their work shift. This study also provides evidence that consumption of sugary drinks may not be part of the etiology of kidney injury in agricultural workers. Encouraging workers to adequately hydrate during the course of the work day is an important measure to help protect their health. Nurses and advocates for worker health play an important role in educating workers on the importance of fluid intake over the day.

Funding: This study was supported by Grant/Cooperative Agreement Numbers R01OH010243 and U54OH007550 from CDC-NIOSH.

CONCEPTS IN RURAL HEALTH RESEARCH

Skill Building to Enhance Health Literacy for Older Rural Adults

Jean Shreffler-Grant, PhD, RN
Professor
Montana State University
College of Nursing
Bozeman, MT
jeansh@montana.edu

Elizabeth G. Nichols, PhD, RN, FAAN
Professor Emerita & Research Scientist
Montana State University
College of Nursing
Bozeman, MT

Clarann Weinert, SC, PhD, RN, FAAN
Professor Emerita & Research Scientist
Montana State University
College of Nursing
Bozeman, MT

Purpose: The purpose of this presentation is to describe a skill building intervention study to improve general health literacy and health literacy about complementary and alternative therapy (CAM) among older rural adults.

Background: In a series of studies, the research team demonstrated that many older rural dwellers had limited health literacy. They often used self-prescribed over-the-counter medications and dietary supplements and learned about them through word of mouth, consumer marketing, or popular literature. They also did not have a clear understanding of what the products were intended to do and did not discuss their use with health care providers.

Methods: A four-part educational program that included content on health literacy, safe use of over-the-counter medicine and supplements, seeking and evaluating information, and communicating with one's provider was delivered to older adults in eight rural communities in Montana and Wyoming. Data were collected pre- and post-intervention. Quantitative and qualitative analyses were used to summarize results and evaluate changes in general health literacy, CAM health literacy, communication with providers, information seeking, and other variables.

Results: At the initial intervention session, 127 participated and completed the pre-intervention questionnaire. Of the initial participants, 67 completed the intervention and the post-intervention questionnaire. Of the 67, most (77.6%) were women, aged 76.5 years (mean), white non-Hispanic (98.4%), married or widowed (64%), and with more than a high school education (61%). Quantitative results included significant changes pre- and post-intervention in general health literacy, CAM health literacy, and information seeking. Qualitative results revealed participants' health status and conditions, use of CAM and other over-the-counter supplements, as well as evaluative data about the intervention.

Implications: Older rural residents are motivated to learn how to be safe consumers and active participants in health care decision-making. Providing education to assist them with health literacy skills such as finding and evaluating health related information is as important as simply providing basic information and is an appropriate role for health care providers.

Abstracts of Podium Presentations

DIMENSIONS OF CANCER CARE

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Comorbidity and Symptom Measurement in Oncology Scale: Development and Pilot Results

*Cheryl Lacasse, PhD, RN, AOCNS
Clinical Professor
The University of Arizona
College of Nursing
Tucson, AZ*

Purpose: The purpose of this measurement study was to conduct initial psychometric testing of a newly developed self-report tool to assess comorbidity burden and symptoms, the Comorbidity and Symptom Measurement in Oncology Scale (COSMOS), and to examine the feasibility of utilizing it with older cancer survivors.

Background and Rationale: More than two-thirds of all cancers are diagnosed in older adults and the diagnosis often co-occurs with normal and pathological changes of aging, which include chronic diseases and related symptoms. Comorbidities and their symptoms may be associated with many adverse health outcomes and may have a profound effect on successful cancer and symptom management and overall quality of life of older adults.

Methods: The COSMOS was initially developed based on a conceptual model that blended the Theory of Unpleasant Symptoms and Common Sense Model. Phase 1 of the two-phase instrument development study focused on scale development and determination of content validity using a panel of six expert clinicians and researchers. Each subscale item was evaluated for inter-rater agreement of relevancy using the content validity index (CVI) and the intraclass correlation coefficient (ICC). Phase 2 included pilot testing the revised Comorbidity Burden and Symptom Perception subscales and symptom attribution descriptor scale in a convenience sample of 62 older adult cancer survivors (32 on active treatment and 30 off treatment for 1 or more years).

Results: Phase 1 results included a scale-CVI of .80 for the comorbidity burden subscale (CoB) and .98 for the symptom perception subscale (SxP). The ICC for each subscale was .97 (CoB) and .84 (SxP), respectively. Subscale items with a CVI of $\geq .80$ and ICC $\geq .60$ were retained. The final CoB subscale 38 items and the SxP subscale had 32 items. Phase 2 included pilot results for the revised COSMOS. Although CoB scores were equivalent between groups, off-treatment group participants had significantly more osteoporosis, thyroid and other chronic conditions ($p < .032$). SxP scores were also similar between groups; however, the active-treatment group reported significantly more nausea ($\chi^2 = 4.03$, $p = .045$), taste changes ($\chi^2 = 7.65$, $p = .006$), and body image disturbances ($\chi^2 = 6.44$, $p = .011$) than the off-treatment group. Three clinically relevant symptom-attribution descriptors discriminated between treatment status groups, indicating a shift from aging and cancer-related attributions in those on active treatment to aging and other causes in the off-treatment population. Test-retest reliability indicated stability for comorbidity burden (ICC = .917) and symptom perception and attribution (ICC = .696) subscales.

Implications: COSMOS was judged to be a feasible measure based on subsample interviews, completion time, and response patterns. The results of this study support initial validity, reliability, and usability of COSMOS. Further research is needed to strengthen the psychometrics of a revised COSMOS. This scale may have utility in a comprehensive geriatric assessment to measure the burden and impact of comorbidity and symptoms in older adult cancer survivors. COSMOS may also have utility in managing ongoing chronic conditions with symptoms in cancer survivors.

Funding: Supported in part by the following grants: National Cancer Institute Training Grant (R25 CA093831), American Cancer Society Doctoral Scholarship in Cancer Nursing (DSCN-03-200-01-SCN), John A. Hartford Building Academic Geriatric Nursing Capacity Predoctoral Scholarship (04-115).

DIMENSIONS OF CANCER CARE

Using Practice-Based Data to Reduce Bloodstream Infections in Children with Cancer

*Lauri A. Linder, PhD, APRN, CPON
Associate Professor & Clinical Nurse Specialist
University of Utah College of Nursing¹*

*Karen McCurdy, BSN, RN, CPON, Nurse Manager¹
Sara Judd, BSN, RN, CPHON, Assistant Nurse Manager¹
Nicole Fritz-Maxcey, BSN, RN, Assistant Nurse Manager¹
Jesika England, BSN, RN, Unit Education Consultant¹
Lanae Lewis, MSNEd, RN, Unit Education Consultant¹
Carla Wilmoth, BSN, RN, Assistant Nurse Manager¹
Cheryl Gerdy, MSN, RN, CPON, Clinical Director¹*

¹*Cancer Transplant Service, Primary Children's Hospital, Salt Lake City, UT*

Purpose: Describe a pediatric oncology unit's 13-year efforts to reduce central line-associated bloodstream infections (CLABSIs) using practice-based data to guide interventions.

Rationale: CLABSIs are regarded as preventable hospital-acquired infections. CLABSI rates are routinely used as indicators of nursing care quality, and many hospitals have implemented enhanced efforts to reduce these infections. Children with cancer and those undergoing hematopoietic stem cell transplant (HSCT) are a subset of hospitalized patients with distinct risk factors for infection. Injury to mucosal tissue following receipt of chemotherapy in the context of profound and prolonged neutropenia creates a heightened risk of infection. Evidence-based interventions to reduce CLABSIs in the context of these risk factors, however, are limited. As a result, our team implemented a systematic practice-based approach of reviewing unit-based data in addition to available sources of evidence to guide interventions.

Process: The project setting was a 32-bed inpatient oncology unit within a quaternary free-standing pediatric hospital. Our process began with a 5-year retrospective review (2006-10) of CLABSIs. Initial interventions implemented in 2011 included Children's Hospital Association's best practice bundles that emphasized heightened antisepsis and situational awareness in relation to central line care. Individual CLABSI events were reviewed with attention to patient-specific, organism-specific, and context-specific factors. Events were also summarized on an ongoing basis in unit- and hospital-based meetings.

CLABSI rates decreased from 4.84/1,000 line days pre-intervention to 3.29/1,000 line days during the 2 years following bundle implementation. While CLABSI rates decreased, organisms common to the skin and mouth remained the most prevalent. Review of unit-based practices suggested inconsistencies with daily hygiene cares. These practice-based findings led to the implementation of formalized supportive cares in 2013. The "1-2-3 cares" included once daily bathing, twice daily oral care, and out-of-bed activity three times/day. Following implementation of these cares, CLABSI rates decreased to 2.59/1,000 line days (2013-17).

Continued review of unit-based data identified significant decreases in all groups of organisms with the exception of those common to the lower gastrointestinal tract. Infections remained most prevalent among patients with acute leukemia, specifically during periods of profound and prolonged neutropenia. These data and continued review of published evidence allowed our team to leverage for use of prophylactic antibacterial therapy for our highest risk patients during their neutropenic phase beginning 4th quarter 2017. 2018 year-to-date rates have decreased to 1.61/1,000 line days.

Outcomes: Using practice-based data to guide interventions has supported our team's sustained efforts in decreasing CLABSI rates among children with cancer and those undergoing HSCT. Data have guided successful interventions targeted at specific organisms and patients at highest risk for infection. Review of data has likewise identified pediatric oncology patients at lower risk for infection. Project outcomes have also allowed us to formalize supportive care practices into unit-based protocols and to leverage for additional population-specific interventions.

Conclusions: Project outcomes emphasize the value of using practice-based data to generate evidence to guide interventions when other sources of evidence are limited. An ongoing, detailed review supports multidisciplinary collaboration to leverage for clinically relevant interventions for patient groups with specific considerations.

DIMENSIONS OF CANCER CARE

Breast Cancer Survivors' and Providers' Attitudes about Exercise in Cancer Care

Cynthia K. Perry, PhD, FNP-BC
School of Nursing
Oregon Health & Science University
Portland, OR

Wafaa Bin Ali, MN, RN
School of Nursing
Oregon Health & Science University
Portland, OR

Emma Solanki, MSc
School of Nursing
Oregon Health & Science University
Portland, OR

Kerri M. Winters-Stone, PhD
School of Nursing
Oregon Health & Science University
Portland, OR

Purpose/Aims: Our aim was to understand the attitudes and beliefs of breast cancer survivors and providers regarding exercise counseling and structured long-term exercise programs as part of cancer care.

Rational/Conceptual Basis/Background: Breast cancer is a survivable cancer, with nearly 3 million survivors in the U.S. today; however, survivors face new health issues due to lingering side effects from cancer treatment. Persistent treatment-related side effects including loss of bone and muscle mass and gains in body fat can increase the risk of frailty, falls, fractures, disability, and obesity-related diseases during survivorship. Prevent Osteoporosis With Impact + Resistance (POWIR), is an evidence-based exercise program that stops bone and muscle loss and reverses fat gain in breast cancer survivors, but research evidence alone does not automatically lead to uptake of effective programs within clinical practice. Learning the shared viewpoints and discrepancies between breast cancer survivors and providers is the next step toward implementation of exercise counseling and referral to the POWIR program within oncology care.

Methods: We used a convergent parallel mixed method design in which quantitative and qualitative data were collected in parallel, analyzed separately, and then merged to compare perspectives of breast cancer survivors and providers. An anonymous self-report survey was administered online via email or on paper via postal mail to survivors and included questions regarding demographics, cancer history, perceived exercise barriers and benefits, attitudes toward long-term structured exercise, and current level physical activity. Providers (nurses, oncologists, social workers) participated in 20 minute semi-structured interviews regarding perception of survivors' motivations and barriers for exercising, exercise counseling, and implementation of exercise counseling within practice. Survey data were analyzed using descriptive statistics and interview transcripts were analyzed using qualitative content analysis.

Results: Sixty-one surveys were completed and ten interviews were conducted. Survivors reported preferences on whom to receive counseling from were gynecologist/primary provider (21%), oncologist (55%), nurse (14%), and no preference (23%). Most survivors indicated that they would commit to a year-long exercise program (yes: 44%, maybe: 44%) and would be interested in a structured exercise program with breast cancer survivors (yes: 52%, maybe: 36%). Most of the providers cited the amount of information that they need to cover and lack of time for additional information during an appointment as significant barriers, and patients' motivation and interest as significant facilitators to engaging in exercise counseling. Providers felt counseling needed to be a team effort and could be nurse driven. There was agreement among breast cancer survivors and providers on the benefits of exercise and the importance of including exercise counseling in routine cancer care. Over half of survivors (54%) reported that they would attend an exercise program at their cancer center and the majority of providers thought cancer centers should offer the POWIR program.

Implications for Translation to Practice/Further Research: Both breast cancer survivors and providers were in agreement on including exercise counseling and structured exercise programs as part of cancer care. Nurses could lead an effort to integrate exercise counseling and referral to structured exercise programming within cancer care.

Funding: Oregon Health & Science University School of Nursing Innovations Small Grant 2016-2017.

DIMENSIONS OF CANCER CARE

Unmet Supportive Care Needs and Disparities between Cancer Patients and Providers

*Sojung Jo, MSN, RN
PhD Student*

*Arizona State University
College of Nursing & Health Innovation
Phoenix, AZ*

*Sunny Kim, PhD
Assistant Professor*

*Arizona State University
College of Nursing & Health Innovation
Phoenix, AZ*

*Linda Larkey, PhD, CRTT
Professor*

*Arizona State University
College of Nursing & Health Innovation
Phoenix, AZ*

Background: Supportive care helps the patient and their family to cope with cancer and cancer treatment. While previous research has begun to investigate supportive care needs for patients, most studies are quantitative and rarely include the provider's perspective. This qualitative descriptive study seeks to identify the specific supportive care and resource needs (physical, informational, emotional, psychological, social, spiritual, practical, financial, sexual, and cultural) and to explore barriers and facilitators, and perception disparities between the patients and their HCPs who are caring for them.

Methods: This study is part of a larger mixed methods study. 108 patients were recruited from the Mayo Clinic Arizona and completed questionnaires. A subset of patients (n=8; M age=58 years; 67% female; 80% White; 40% breast cancer) and their HCPs (n=7; nurses, oncologist, social workers, navigator) participated in a 60-90 minute in-depth interviews. Participants were asked about their cancer care experiences and their supportive care needs. Interviews were recorded and transcribed verbatim. Utilizing a constant comparative approach, line by line coding and content analysis were conducted. Three research team members coded the data, and utilized inter-rater coder agreement.

Results: Major themes from the patients included a) desiring tailored information/care, b) better communication with HCPs, c) support of caregiver's emotional health, and d) informational needs. Major gaps identified by HCPs were the need for a) more positive support group dynamic, b) informational support, c) psychological support, and d) financial support. Patient and provider perspectives were similar in terms of desiring more information and resources. The perception disparities between two groups are regarding tailored care, support of caregiver's emotional health, and support groups. Patients expressed desire for more tailored information and explanation, but HCPs focused on the tailored care plan. Patients discussed needs for emotional support for caregivers, but HCPs reported needs for information and financial support for caregivers. HCPs reported caregivers' needs are already met and provided from the hospital. Patient participation in support groups varied, with a variety of patient and provider perspectives on their effectiveness. The importance of the skill of the facilitator was viewed as paramount.

Conclusion: Although clinicians acknowledge the importance of supportive care in patients' outcomes and satisfaction, it appears there is limited consensus on an optimal model for care delivery and interventions among both patient and HCPs perspectives. The current study is a critical step in defining the gaps and potential next steps in providing an optimal cancer care plan to decrease unmet needs for cancer patients.

Implications: This study provides important implications for health behavior researchers that information needs about psychosocial support services and tailored care from interdisciplinary HCPs are important factors for the psychosocial intervention development. Providers are currently referring to external support services and therapies, however, it would be desirable to offer some of these services internally. Future interventional studies are needed to test patient satisfaction with a potential expansion of in-house services, and need to include underserved populations.

Funding: This project is supported by the ASU/Mayo Collaborative grant.

Abstracts of Podium Presentations

END OF LIFE / PALLIATIVE CARE

END OF LIFE / PALLIATIVE CARE

Optimizing Palliative Care in Parkinson's Disease: Patient and Caregiver Perspective

Roman Ayele, PhD, MPH^{1,2}; Jacqueline Jones, PhD, RN²; FAAN; Sarah R. Jordan, MA³; *Hillary D. Lum, MD^{3,4}, PhD; Malenna Sumrall, PhD⁵; Maya Katz, MD⁶; Janis Miyasaki, MEd, MD⁷; Benzi Kluger, MD, MS⁸

1. Denver-Seattle Center of Innovation, Rocky Mountain Regional Veterans Affairs Medical Center, Denver, CO
2. College of Nursing, University of Colorado Anschutz Medical Campus, Aurora, CO
3. Division of Geriatric Medicine, Department of Medicine, University of Colorado Anschutz Medical Campus, Aurora, CO
4. VA Eastern Colorado Geriatric Research Education and Clinical Center, Denver, CO
5. Care partner for Parkinson's Disease Patient and Advocate, Castle Rock, CO
6. Movement Disorders and Neuromodulation Center, University of California, San Francisco, CA
7. Division of Neurology, University of Alberta, Edmonton, Alberta
8. Department of Neurology, University of Colorado Anschutz Medical Campus, Aurora, CO

Background: Palliative care for Parkinson's disease (PD) is an emerging area of interest for clinicians, patients and caregivers. Optimizing palliative care for patients and caregivers is central to providing quality care that meets the needs of families affected by PD. The objective of this paper was to elicit PD patient and caregiver suggestions for optimizing palliative care, preferences for measuring what matters and meaningful outcome.

Methods: Using qualitative descriptive design, we conducted semi-structured interviews with 30 patients and 30 caregivers affected by PD from a multi-site, randomized clinical trial of neuropalliative care compared to Standard care. Participants were asked to provide suggestions for improving Parkinson's disease palliative care, including perspectives on meaningful outcomes and what researchers should measure to best capture patient and caregiver lived experience with PD. Team based thematic analysis was used to identify key themes.

Results: Participants identified four main themes for optimizing palliative care in PD. These included the need for: 1) objective measures in understanding PD and patient progress 2) Measuring what matters such as quality of life and preparedness for the stages of PD 3) Understanding the role of palliative care team in benefiting patients and caregivers 4) Linkage to existing clinical and supportive non-clinical resources. While these themes were similar across participants from palliative care and standard care arm, there was emphasis from standard care arm participants on services that were received by palliative care arm. These included: a desire for individual consultation of patients and caregivers during appointments and assessment of caregiver needs and referral to resources.

Conclusions: Engaging patient and caregiver perspectives in optimizing palliative care in PD is essential to understanding the value of palliative care provided, in helping improve future palliative care practices and providing opportunities for patient and caregiver feedback. These suggestions can be used to provide patient centered and improved guidance for community neurologists and provide direction for researchers to identify and direct patient and caregiver centered needs.

Implications: Understanding patient and caregiver perspectives to optimize palliative care is essential for providing patient centered, caregiver informed palliative care. Future research and research should incorporate these practical suggestions to optimize palliative care for PD.

END OF LIFE / PALLIATIVE CARE

Integrating IPE and Palliative Care: Nursing and SLP Students Experience

Nassrine Noureddine, RN, MSN, Ed.D
Assistant Professor, School of Nursing
California State University, Sacramento
Sacramento, CA
Noureddinen@csus.edu

Purpose/Aims: The purpose of this study was to investigate the impact of teaching palliative care to nursing and speech-language (SLP) pathology students using Interprofessional Education (IPE) and Team-Based Learning (TBL) pedagogy. This study is a replication of a similar study that the author conducted in 2016, the results of which revealed unexpected presence of an interprofessional bias among health care professions' students. This study helped validate the findings of the previous study.

Rationale/Background: Palliative care is provided for individuals diagnosed with a serious illness. The geriatric population may have the greatest need of palliative care and is anticipated to represent 20% of the United States population by 2030. The elderly typically present with multiple chronic conditions and are expected to consume 66% of the country's future healthcare budget. Interdisciplinary teamwork is the gold standard of palliative care, and IPE is the best pedagogy to prepare a collaborative ready healthcare workforce.

Methods: An interprofessional team of professors designed and provided an educational event involving an IPE didactic and team-based learning experience on palliative care. This study used a mixed methods design with a convenience sample of 60 nursing, and SLP students. Participants completed demographic questions, and the Interprofessional Attitude Scale (IPAS) survey (Norris et al., 2015) and provided reflective responses. Descriptive analysis was used to analyze the data.

Results: Over 95% of participants reported valuing the importance of shared learning and the positive impact it has on patient's health care outcomes. Over 37% of participants reported that they believe that other healthcare professionals hold prejudices and assumptions about their disciplines. Over 33% of students believe that they have prejudices and make assumptions about students from other healthcare disciplines. Yet, over 90% believe that these biases get in the way of delivery of care. Analysis of qualitative data resulted in two emerging themes: (a) the knowledge of hospice vs. palliative care and (b) the importance of IPE. These findings validate the findings from the previous study.

Conclusion/Implications to Practice/Recommendations: The presence of interprofessional biases and prejudices among health professions students who are soon to be practicing health care professionals may impede collaborative practice resulting in compromised patient safety and healthcare outcomes. Educators can play a big role in helping their students become aware of their existing interprofessional biases. They can model and educate students to act in a supportive manner towards other healthcare disciplines. The inclusion of IPE into the curriculum may serve to build trust and reduce biases between healthcare students while preparing them to join a collaborative-ready workforce.

Acknowledgement: The author would like to thank Dr. Darla Hagge, Dr. Debra Brady and Dr. Pouria Kashkoui for their support in completing this research.

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END OF LIFE / PALLIATIVE CARE

A Systematic Review on Quality of Life and Palliative Care in HCC: Is There a Disconnect?

*Jenny Firkins, BSN, RN, CNRN
PhD Candidate*

*Robin Tarter, BSN, RN
PhD Student*

*Lissi Hansen, PhD, RN
Professor*

*School of Nursing
Oregon Health & Science University
Portland, OR*

Background: Hepatocellular carcinoma (HCC) is the most common form of liver cancer and the second leading cause of cancer related mortality worldwide. In the United States, HCC is estimated to be the fifth highest cancer related death for men, and ninth highest for women with a 5-year survival rate of 18%. HCC is a complicated disease usually seen alongside advanced liver cirrhosis. This leads to a high symptom burden including pain, fatigue, loss of appetite, diarrhea, anger, and depression. In light of the severity of these symptoms, quality of life (QOL) for patients with HCC should be of paramount concern. Palliative care (PC) is a service for patients with serious illness, and their families, with the goal of improving QOL. With QOL being the pillar of PC, QOL would be expected to be a focus in PC literature for patients with HCC.

Purposes/Aims: The aims of this systematic review were to describe the way that QOL is defined and operationalized in the HCC literature and to describe the inclusion and discussion of QOL in patients with HCC in the PC literature.

Methods: Two searches were conducted using PubMed, PsychINFO, and CINAHL electronic data bases to identify articles (2006 - 2018) in English based on the following criteria: TERMS: Search 1) (quality of life OR QOL OR HRQOL OR Health related quality of life) AND hepatocellular carcinoma; Search 2) palliative care AND hepatocellular carcinoma; INCLUSION: Primary population HCC, adults, article reported QOL results and/or included PC; EXCLUSION: Use of the Karnofsky Performance Score as a measure of QOL, palliative treatment studies. First titles, abstracts, and retrieved articles were reviewed (JF and RT). Then retrieved articles were excluded based on consensus among reviewers (JF, RT, and LH).

Results: Of the 1,157 articles identified for the QOL review, 36 were included. Of 185 articles identified for the PC review, 9 were included. Data were extracted from each review separately and results were then combined for analysis. A variety of QOL measures (FACT, EORTC, SF-36, study specific measures) were used in the 36 studies. These studies lacked a firm definition of QOL and none of them included PC. Of the articles included in the PC review, 6 included discussion on QOL. The analysis showed that PC was not a part of the QOL articles and QOL was only discussed in a portion of the PC articles. This suggests a potential disconnect between QOL and PC research in HCC, two concepts one would expect to be closely related.

Implications for Translation to Practice/Further Research: The scientific knowledge gained from this review demonstrates a need for combined research including QOL and PC in patients with HCC, determining how QOL should be defined and by who, as well as examining its relationship to PC. Such research is essential to develop evidence-based standards to guide clinical practice and care for patients with HCC as their disease progresses toward the end of life.

END OF LIFE / PALLIATIVE CARE

Dialysis Discontinuation and Family Perceptions of End-of-Life Care

Claire A. Richards, PhD, RN, Postdoctoral Fellow¹ Pamela K. Green, PhD MPH, Data Analyst¹
Chuan-Fen Liu, PhD, MPH, Investigator¹ Lynn F. Reinke, PhD, ARNP, Investigator¹
Paul L. Hebert, PhD, Investigator¹ Leslie L. Taylor, PhD, Statistician¹
Mary Ersek, Senior Scientist² Ann M. O'Hare, MD, Investigator¹
Melissa Wachterman, Investigator³

¹Health Services Research & Development, Veterans Affairs Seattle-Denver Center of Innovation for Veteran-Centered and Value Driven Care, Seattle, WA

²National Veteran Experience Center, Corporal Michael J. Crescenz Veterans Affairs Medical Center, Philadelphia, PA

³Health Services Research & Development, Veterans Affairs Boston Health Care System, Boston, MA

Purposes/Aims: We sought to compare treatment intensity and family perceptions of end-of-life care and among people on maintenance dialysis who discontinued dialysis before death with those who continued dialysis until they died.

Rationale/Conceptual Basis/Background: People with end-stage renal disease treated with dialysis receive more intensive patterns of end-of-life care and have lower family-rated quality of end-of-life care compared to patients with other serious illnesses and those with advanced kidney disease not treated with dialysis. People who discontinue dialysis have higher rates of palliative and hospice care and are less likely to die in the hospital as compared to those who do not. To date, little is known about family perceptions of end-of-life care related to discontinuity of dialysis.

Methods: We conducted a retrospective study among a cohort of 3,350 Veterans with advanced chronic kidney disease treated with maintenance dialysis who died in a VA facility between 2009 and 2015. We examined the relationship between discontinuation of dialysis before death and family-rated quality of end-of-life care using individual items from the Bereaved Family Survey (BFS) using multivariate logistic regression, adjusting for patient clinical and demographic characteristics and survey nonresponse. Additionally, we adjusted for acute hospital and intensive care unit (ICU) admissions, death in the ICU, and receipt of intensive procedures, palliative care, and hospice services near the end of life.

Results: Overall, 50.6% (n=1,694) responded to the survey. Among the sample, 27.9% discontinued maintenance dialysis treatments before death. Compared with those who did not discontinue dialysis, those who discontinued dialysis were as likely to have ≥ 3 acute hospital admissions in the last 90 days of life but were less likely to be admitted to the ICU in the last 30 days (adjusted odds ratio (aOR) 0.78, 95% CI: 0.67-0.92), die in the ICU (aOR 0.28, 95% CI: 0.23-0.36), and receive an intensive procedure (aOR 0.5, 95% CI: 0.42-0.61), and were more likely to receive palliative (aOR 2.33, 95% CI: 1.95-2.78) and hospice care (aOR 6.52, 95% CI: 5.18-8.2). After adjustment for patient characteristics, bereaved family members of patients who discontinued dialysis were more likely to report excellent overall care at the end of life (57% v. 44%, aOR 1.6, 95% CI: 1.27-2.02) and had more favorable responses to most other BFS items, as compared to those who did not discontinue dialysis. After additional adjustment for differences in patterns of end-of-life care, family members of those who discontinued dialysis were still more likely to report that providers always took time to listen, kept the patient and family informed, attended to personal care needs, gave emotional support before and after death, and alerted the family before the patient's death (all $P < 0.05$).

Implications: Family ratings of end-of-life care for Veterans who discontinued dialysis treatments before death are more favorable than for those who continued these treatments, even after adjustment for differences in end-of-life treatment patterns. These findings highlight the importance of defining the role of dialysis discontinuation in shaping quality of end-of-life care for patients receiving dialysis.

Funding: This work was supported by the VA Health Services Research and Development Service (VA IIR 12-126) to Dr. O'Hare and the VA Office of Academic Affiliations' Advanced Fellowship in Health Services Research and Development to Dr. Richards (#TPH 61-000-22).

Abstracts of Podium Presentations

HIV, HEALTHCARE, AND HEALTH BEHAVIORS

HIV, HEALTHCARE, AND HEALTH BEHAVIORS

Re-Linkage to HIV Care among Persons Living with HIV (PLWH) with a Gap in Care of Six Months or More

Jamie L. Mignano, PhD, RN, MSN, MPH

PhD Student, College of Nursing

University of Colorado at Anschutz Medical Campus

Aurora, CO

jamie.mignano@ucdenver.edu

Purpose/Aims: The purpose of the study was to identify potential community level and individual level characteristics of re-linkage to HIV care among out of care people living with HIV (PLWH). Andersen's Behavioral Model (ABM), a health services research model that describes access and use of health care in vulnerable populations, was the theoretical framework applied in the study.

Rationale/Conceptual Basis/Background: Despite widespread attention to the HIV care continuum over the past several years, little attention has focused on the 45% of PLWH that are not retained in care who are responsible for more than 60% of new HIV infections. The gaps in the HIV care continuum are further compounded by the disproportionate burden of HIV among individuals affected by social and economic disparities. The purpose of the study was to identify potential community level and individual level characteristics of re-linkage to HIV care among out of care PLWH.

Methods: A two-level generalized linear model was used to test the constructs of ABM and their association with re-linkage to outpatient HIV care after a gap in care of six months or more among out of care, hospitalized PLWH. A total of 328 hospitalized PLWH encountered at two urban hospitals from 2013-2016 nested in 12 zip codes were included in the study. Community data at the zip code level was obtained from the American Community Survey (2010-2014) and the Maryland HIV Epidemiologic Report (2013). Composite scores for socioeconomic disadvantage were created based on the mean of five tested measures using regression methodology. Zip code level HIV prevalence was also tested.

Results: The intraclass correlation coefficient, derived from the unconditional model was 0, indicating no significant clustering by zip code. However, the multi-level framework was maintained for the bivariate and multivariate analyses based on the study's theoretical model. The final model indicated that participants with a non-IDU associated risk factor, without a substance use history and with stable housing are more likely to re-link to HIV care after hospitalization (intercept = -0.7139) than individuals with these characteristics and re-linking based on the unconditional model (intercept = -0.1834). The predicted probability of re-linkage to care was 0.70 in the conditional model, versus 0.54 in the unconditional model. The deviance test between two models indicated a better fit in the conditional model ($X^2_{diff} = 16.26$).

Implications: This study identified characteristics of re-linkage to HIV care after hospitalization among PLWH who are out of care in Baltimore, Maryland. Some findings are consistent with research pertaining to other parts of the HIV care continuum, however, the results of this study indicate that re-linkage may be its own concept. Future research that covers a broader geographic base is needed to determine if there are zip-code level effects on re-linkage to HIV care. Furthermore, future research should examine longitudinal HIV care continuum outcomes (i.e. retention, viral suppression) after re-linkage to care. Finally, operations research is needed to test interventions in this population based on research findings.

Funding: Jonas Nurse Leaders Scholar Program (2016-2018).

HIV, HEALTHCARE, AND HEALTH BEHAVIORS

Tobacco, Alcohol, Drug Use, and Intimate Partner Violence among HIV-Positive MSM

Wei-Ti Chen, RN, CNM, PhD, FAAN
Associate Professor, School of Nursing
University of California, Los Angeles
Los Angeles, CA

Chegnshi Shiu, MSW, PhD, G Stat
Post-Doctoral Fellow
Associate Professor, School of Nursing
University of California, Los Angeles
Los Angeles, CA

Peing Chuang, RN, MSN
Nurse Director
Kunming Branch, Center of Disease
Prevention and Control
Taipei, Taiwan

Purposes/Aims: This study examines the relationships between accumulative intimate partner violence (IPV) over the previous year and types and numbers of substance use in the previous week.

Rationale/Conceptual Basis/Background: It has been well documented that men who have sex with men (MSM) worldwide are at higher risk to use certain substances, including tobacco (21-50%), alcohol (85-90%), and recreational drugs such as stimulants (35-59%), as well as at higher risk of concurrent use of two or more substances (37-40%). Substance use, however, may have contributed to health disparities experienced by the men who have sex with men (MSM) population. It has been well documented that tobacco use increases the risks of mental illness and immune dysregulation. Also, use of alcohol and stimulant/recreational drugs is often associated with heightened risks of engaging in condomless sex, which increases the rate of HIV infection among MSM both in Western and Asian countries. Although HIV-positive MSM report high rates of IPV as well as substance use, little is known about associations between the two.

Methods: A sample of 120 HIV-positive MSM was recruited from Taipei Union Hospital System (TUH), from 2011-2012. A cross-sectional survey study design was used. Several variables were chosen for statistical modeling, including demographics, Danger Assessment (DA) for IPV experiences, frequency and type of substance use, clinical factors (year of HIV infection, viral load, physical quality of life (QOL)), and psychosocial factors (HIV knowledge, anxiety level, disclosure, and social support). As we focused on the relationships between IPV and substance use, all the other variables were selected and treated as controlling factors in the model. Accumulative IPV was captured by summing 15 types of IPV the participants experienced in the previous year. Substance use was measured by whether the participants used tobacco, alcohol, or stimulant/recreational drugs during the previous week. A composite score summing the types of substance used was created. Multivariate logistic and ordinal regression were utilized accordingly to test the associations between IPV and substance use.

Results: In multivariate analysis, IPV was not associated with tobacco use ($p > .05$), but was positively associated with alcohol ($p < .05$) and stimulant/recreational drug use ($p < .05$) in the previous week. This lack of association with tobacco use and IPV might be due to the fact that the rate of smoking was already high even for those participants without IPV. Therefore, tobacco use might not be sensitive enough to the test variations of IPV. However, IPV experiences were significantly associated with greater probability of using multiple substances ($p < .05$). HIV+ MSM who experience greater IPV are more likely to use alcohol and stimulants or other drugs, as well as more likely to use more than one form of substances. Also, HIV+ MSM's experience of IPV is associated with increased concurrent use of different substances.

Implications for Translation to Practice/Further Research: Healthcare providers screening for IPV should be aware of potential substance use among this vulnerable population. Trauma-informed interventions may also be effective in helping HIV+ MSM manage their substance use.

Funding: We gratefully acknowledge all the study participants, without them, it is not possible to complete these projects. This publication resulted (in part) from research supported by NINR under Award Numbers [K23NR14107; PI: Chen, Wei-Ti] and NIMHD [R03MD012210; PI: Chen, Wei-Ti]. In addition, the research project was supported by DOH101-DC-1004 from the Taiwan Centers for Disease Prevention and Control (PI: Chuang, Peing). The contents of this article are solely the views of the authors and do not represent the official views of the National Institutes of Health.

HIV, HEALTHCARE, AND HEALTH BEHAVIORS

Age and Race-Related Differences in Health Behaviors of MSM Sex Workers in San Francisco

*Kristopher Jackson, MSN, AGACNP-BC,
CCRN, PhD Student
College of Nursing
University of New Mexico
Albuquerque, NM*

*Shana Judge, MA, MPP, JD, PhD
Assistant Professor
College of Nursing
University of New Mexico
Albuquerque, NM*

Purpose: This study examined whether age- and race-related differences exist among men who have sex with men (MSM) and who are sex workers in the San Francisco area in terms of their stated use of pre-exposure prophylaxis (PrEP) and willingness to engage in illicit drug use and unprotected anal intercourse.

Background: Although prior research has examined risky health-related behaviors among female sex workers, similar studies of MSM sex workers are lacking. Further, the few studies that have examined sexual behaviors among MSM sex workers have been conducted prior to approval of PrEP for HIV prevention. In the U.S., HIV continues to affect non-white MSM disproportionately, while recent studies indicate rates of PrEP use among non-white MSM tend to be lower than among white MSM. Prior research also suggests the prevalence of unprotected sex and illicit drugs may vary by race. However, these phenomena have not been studied among MSM sex workers.

Methods: Many sex workers advertise services online. These advertisements are publicly available and may include information regarding risk-taking and health maintenance behaviors. Using an advertising website popular among MSM sex workers in San Francisco, we collected information on these behaviors from 321 ads posted between December 2017 and March 2018. We then created variables measuring the advertised age and race of each sex worker, and whether he stated he was taking PrEP and was willing to use illicit drugs or engage in unprotected sex. We used bivariate statistical tests to determine whether statistically significant differences in these behaviors exist among six advertised racial groups.

Results: We found no significant differences among racial groups between those sex workers who stated they were using PrEP and those who did not ($p=0.398$, Fisher's exact test) or between those who indicated their willingness to engage in unprotected sex and those who did not ($p=0.203$, Fisher's exact test).

Our results did show significant differences among racial groups between those who indicated a willingness to use drugs and those who did not ($p=0.004$, Fisher's exact test), with a higher percentage of non-white sex workers (78%) advertising a willingness than white (56%). This difference could be driven by the younger average age of the non-white sex workers. The mean age for whites was significantly higher than the mean for non-whites ($t(283)=6.05$, $p<.001$). But the mean age for those advertising a willingness to use drugs was significantly lower than the mean for those who did not ($t(106)=-2.27$, $p=.03$). Moreover, logistic regression results show that, after controlling for age, the odds a non-white sex worker would advertise a willingness to use drugs are about 40% lower than the odds for whites (OR=.61, 95% CI [0.30, 1.24]).

Implications: Our findings run counter to current research describing racial disparities in access to PrEP and PrEP use in the U.S. Our results suggest these disparities may not be significant among MSM sex workers in San Francisco. Further, our findings regarding behavior patterns of drug use and unprotected sex will be informative for providers who care for this population.

HIV, HEALTHCARE, AND HEALTH BEHAVIORS

Barriers and Facilitators for HIV Self-Testing among Chinese Men Who Have Sex with Men

Xianhong Li, RN, PhD
Associate Professor, Vice Dean
Xiangya Nursing School
Central South University
Changsha, China

Ci Zhang, BSN
Graduate Student
Xiangya Nursing School
Central South University
Changsha, China

Deborah Koniak-Griffin, EdD, RNC, FAAN
Professor and Associate Dean for Diversity,
Equity, and Inclusion
UCLA School of Nursing
Los Angeles, CA

Purpose: To identify the barriers and facilitators for delivering HIV Self-testing (HIVST) kits, administering HIVST, and linking Chinese men who have sex with men (MSM) to care after testing.

Rationale/Background: China's HIV prevalence is currently shifting from a drug-driven epidemic to a sexually-driven epidemic. A key factor contributing to the epidemic is the rapidly rising number of HIV cases among MSM. Further complicating the situation, is the fact that a significant number of Chinese MSM haven't been tested for HIV. China is now expanding HIV testing among MSM by promoting the self-testing approach. Inconsistent data exist about the rate of acceptability for HIVST among MSM in China and their perceptions and experiences related to HIVST. Research is needed to understand the barriers and facilitators to HIVST among MSM in China.

Methods: A descriptive qualitative approach was adopted to conduct semi-structured interviews with 23 MSM in three cities in Hunan Province, China from July 2017 to June 2018, with the assistance of gay-friendly community based organizations (CBO). A purposive sampling method was used to maximum the diversity of background characteristics among participants (e.g., age, marital status, history of HIVST). The audio-recorded interviews were conducted in private rooms by the first author in a mutually agreed upon convenient location after obtaining informed consent. Field notes and informal interviews were recorded by the researchers during field visits to the CBO. Data were transcribed immediately after the interviews and analyzed using thematic analysis with the assistance of software NVivo 11.0.

Results: All participants reported previous HIV testing; 4 (17.4%) MSM never performed HIVST and 19 (82.6%) had experiences performing HIVST. Among MSM who had performed HIVST, 13 (68.4%) MSM tested using blood-based finger-prick HIVST kits and 6 (31.6%) used oral-based HIVST kits. Five (26.3%) MSM reported positive HIV self-testing results, including one man who performed the test with his partner. Fourteen (73.7%) MSM had negative self-testing results. Major barriers to HIVST included: (1) limited accessibility of kits; (2) worrying about service quality from HIVST providers; (3) perceiving the testing procedure was complex (among non-testers); (4) fearing disclosure of sexual orientation or HIV serostatus to their wives among married MSM; (5) cost concerns about HIVST kits; and (6) perception of low HIV risk. Facilitators to HIVST included: (1) convenience; (2) confidentiality; (3) easy operation; (4) willingness to have their (potential) partners tested; and (5) having a friend who used HIVST kits or was HIV positive.

Conclusions/Implications: Our findings provide important information needed for the development of appropriate and effective approaches to promote HIVST among Chinese MSM, The HIVST approach has the potential to increase HIV testing among Chinese MSM. However, when scaling up this approach, barriers for implementing HIVST need to be addressed by the Chinese government, including: regulation of the HIVST system to guarantee service quality and an affordable price; reducing HIV and gay-related stigma by salespersons in pharmacies that may prevent purchase of HIVST; and provision of special services for married MSM.

Abstracts of Podium Presentations

**INNOVATIONS IN CROSS-CULTURAL
RESEARCH**

INNOVATIONS IN CROSS-CULTURAL RESEARCH

Community-Based Dementia Care Education for Underserved Asian Americans

Jung-Ah Lee, PhD, RN
Associate Professor, School of Nursing
University of California, Irvine (UCI)
Irvine, CA

Julie Rousseau, PhD, RN, CNW
Volunteer Clinical Professor
Sue & Bill Gross School of Nursing, UCI

Hannah Jiyoung Kang, Student
Sue & Bill Gross School of Nursing, UCI

Hoa Diep, Student
Sue & Bill Gross School of Nursing, UCI

Soyoung You, PhD, RN
Volunteer Research Associate
Sue & Bill Gross School of Nursing, UCI

Junghwa Lee, MA
Volunteer Research Associate
Sue & Bill Gross School of Nursing, UCI

Christine Le, Student
Biological Science, UCI

Kajung Hong, BA
Junior Scientist, Psychology, UCI

Dara Sorkin, PhD
Associate Professor
School of Medicine, UCI

Lisa Gibbs, MD
Clinical Professor, Medical Director
Geriatric Medicine, UCI

Background: There are significant barriers to dementia care in underserved Vietnamese Americans (VA) and Korean Americans (KA), with low income, limited English proficiency, low health literacy, limited health insurance, and stigma surrounding dementia. VA and KA families of persons with dementia (PWD) often seek help for care in the later stage of dementia. They underutilize available public services of dementia. Their unmet needs could be related to lack of dementia care education that is culturally and language appropriate.

Objective: To provide a culturally tailored, language specific, community-based dementia care education series for the VA and KA communities.

Methods: University nursing faculty and students developed partnerships with local VA and KA community centers as well as a local Alzheimer's service agency in Orange County (OC). Based on information from a needs assessment of VA and KA families of PWD about caregiving difficulties and experiences, we developed an education series including understanding Alzheimer's and related dementias, compassionate communication skills with PWD, caregiver stress management, and dementia care resources specific to their ethnicity (e.g., KA or VA Alzheimer's family support groups). Flyers for the series were released via local newspapers, radio stations, e-listserve of the community centers, local medical offices, and posted in local grocery markets. Dementia education videos regarding how to handle difficult behaviors of PWD were used during the lecture. The educational materials and the lectures were offered in Korean and/or Vietnamese.

Results: A total of 421 participants (309 KA; 112 VA; age ranging from 53 to 88; 66% female) attended 12 education sessions conducted in KA- and VA-community centers in OC. Although we invited all interested parties, about 22% of participants had PWD. The evaluation score for educational content and methods were 4.5/5. Participants commented that they 'understood more about how to take care of PWD', 'learned communication skills' but wanted 'more dementia care educational workshops'.

Conclusions/Implications: Bilingual nursing students and faculty provided targeted community-based dementia care education for ethnic minority elders and families with PWD based on their needs. Community and university partnerships could provide a public health model to improve dementia education and care for those with limited resources.

Funding: The project was supported by (1) the National Center for Research Resources and the National Center for Advancing Translational Sciences, National Institutes of Health, through Grant UL1 TR000153 and (2) the Arthur N. Rupe Foundation.

INNOVATIONS IN CROSS-CULTURAL RESEARCH

Smart Home Adoption by Older Asian Immigrants: A Culturally Safe Care Context

Connie Kim Yen Nguyen-Truong, PhD, RN, Alumna PCCN¹, Christine Lau, MA, CACD², Junghee Lee, PhD³, Cang Le, BS⁴, Jane Kim, MEd⁴, Keith Wong, BA⁴, Jacqueline Leung, JD, MS, CHW⁵, Thai Hien Nguyen, BSN, RN⁶, Tuong Vy Le, MS, BS⁶, Jennifer Nevers, RN⁷, Anthony My Truong, BS, RPh⁶ and Roschelle Fritz, PhD, RN⁸

(1) College of Nursing, Washington State University, Vancouver, WA; (2) Asian Health & Service Center, Portland, OR; (3) School of Social Work, Portland State University, Portland, OR; (4) Community & Public Health Department, Asian Health & Service Center, Portland, OR; (5) Public and Global Health, Oregon State University Consultant/Research Assistant of the Asian/Pacific American Community, Salem, OR; (6) Consultant, Asian/Pacific American Community, Portland, OR; (7) Nursing, Washington State University - Vancouver, Vancouver, WA; (8) Nursing, Washington State University, Vancouver, WA

Purpose: To explore: a) older Asian immigrants' knowledge and perceptions of health-assistive smart home monitoring (Smart Home) as they relate to culturally-specific expectations, and b) the influence of socially-constructed predictors and barriers to adopting Smart Homes.

Background: Smart Homes use environmental sensors (motion, door use, light, temperature, humidity) and artificial intelligence (AI) algorithms to capture daily activity patterns of older adults. The intelligent algorithms are capable of detecting and alerting caregivers about health-related abnormal activity patterns so proactive interventions can be taken. Leaders from an Asian immigrant community expressed a need to explore the cultural context of Smart Home adoption and provision of culturally safe care. To date, existing Smart Home AI functions have been primarily designed by young digital natives and tested by non-Hispanic Whites for primarily non-Hispanic White older adults. The absence of minority voices and their activity data in developing Smart Home AI algorithms could perpetuate health inequities. AI technology requires diverse population samples to avoid culturally biased algorithms. To deploy Smart Homes in a culturally safe manner, researchers must first understand older immigrants' perceptions and expectations regarding Smart Home technology.

Methods: Community-engaged research methods guided the formation of a community-academic research partnership. Using purposive sampling, 55 older Asian immigrants were recruited from a metropolitan Asian health center into one of four focus groups (Korean, n=12; Cantonese, n=16; Mandarin, n=12; Vietnamese, n=15). Scientific group level assessment (GLA) methods guided data collection and initial analysis with real-time participant involvement. Open-ended and semi-structured deliberate questions prompted discussions lasting 90 minutes. Responses were transcribed onto flip charts in participants' native languages. Participants verified flip chart language-based data. Field notes of within-group interactions were recorded by observers. Data were later translated into English using a team approach. Content analysis was used to organize data into themes across and within groups. Trustworthiness and credibility were ensured by checking English translations against recorded responses and through analytic team and cultural-peer debriefing. Roger's Diffusion of Innovation Theory informs this work.

Results: In general, participants were open to the idea of Smart Home adoption. Participants' mean age was 72.13 years and they had lived in the United States on average 26.04 years. Sixty percent (n=33) were female and 40% (n=22) were male. Five themes emerged across groups. They were: 1) *safety*; 2) *features and functionality*; 3) *trusting technology*; 4) *households and family*; and 5) *access* (cost, internet, knowledge, and literacy). Within group themes were: Korean (*limited technology knowledge, functionality, household makeup, privacy, threats, availability and cost, Asian culture*); Cantonese (*access, radiation concerns, user friendly, installation, technology knowledge required*); Mandarin (*access, emergency concerns, user friendly, locus of control; technology knowledge required, language*); Vietnamese (*limited technology knowledge, smart home capacity, availability, accessibility, safety, cost, Asian homes*).

Implications: Minority voice and data are needed for developing culturally sensitive AI. Nurse researchers must work alongside families and cultural community leaders in a culturally safe manner when deploying Smart Homes for research. Nurses should understand cultural expectations for informed shared decision-making when deploying Smart Homes for aging-in-place in the future.

Abstracts of Podium Presentations

INNOVATIONS IN DIABETIC CARE

INNOVATIONS IN DIABETIC CARE

Improving Diabetes Care in a Nurse Practitioner Led Clinic with Team Engagement: A QI Project

*Tarnia Newton, DNP, FNP-C
DNP Student
Frontier Nursing University
Hyden, KY*

Aim: The aim of this quality improvement project was to improve the percentage of diabetic patients receiving standardized, appropriate diabetic care to 90% over 90 days.

Background: People with diabetes are at higher risk for heart disease, stroke, blindness, kidney failure, extremity amputations. Diabetes and its complications, deaths, and societal costs have a huge and rapidly growing impact on the United States.

Rationale: Prior to this project, no standard routine best practices were followed for diabetic patients at this chaotic clinic. Consequently, diabetic patients were receiving sub-optimal care. A chart audit of diabetic patients showed a significant gap in care, with 75% of patients having a Glycated Hemoglobin (HbA1C) of more than 8%, 25% having inadequate blood pressure control, and 100% had one or more preventative care measures not completed.

Methods: A rapid cycle quality improvement model was used with four two-week Plan-Do-Study-Act (PDSA) cycles. Iterative tests of change (TOC) were used to improve team confidence, patient engagement, diabetes care measures, and preventative care referrals. Test interventions of change (TOC) were introduced every two weeks for four PDSA cycles in the four areas of concentration: team engagement, patient engagement, diabetic care measure checklist, and preventative care referrals. Operational definitions were established for each TOC to prevent ambiguity. Data were collected and analyzed using run charts, chart audits, and surveys.

Interventions: Primary interventions included education sessions, team meetings, morning huddles, patient engagement tool to empower diabetic patients to make goals, diabetic care measure checklist utilization, and preventative care referrals.

Outcomes Achieved/Documented: The team substantially improved through team meetings, one-on-one educational sessions, and morning huddles. Correlation between implementation of morning huddles, and the use of a huddle board facilitated effective communication, subsequently improving patient engagement, and completion of diabetes care measures thus, providing better diabetic care. Final results for PDSA cycle four demonstrated 91.25% of patients received standardized, appropriate diabetic care an improvement from 27%, team confidence increasing to 90% from 50%.

Conclusions: This project highlights that a team has significant power for achieving better diabetic outcomes. Factors promoting the success of this project included seeking out new processes, ideas, and support from team members who, in turn, learned that team dynamics and cohesiveness are paramount in a QI project. The major success of this project was the process of change affecting the overall team with improved cohesiveness, confidence, and communication, thus resulting in improved diabetes patient care.

INNOVATIONS IN DIABETIC CARE

Are Double-Checks Vital Prior to Safe Subcutaneous Insulin Administration?

Sarah Diamsay Turecek, MSN, RN, PCCN
Clinical Nurse III, Sub-ICU
Hoag Memorial Hospital Presbyterian
Newport Beach, CA
diamsaysarah@gmail.com

Annette Callis, PhD, MSN, RN, CNS
Associate Professor
School of Nursing
Vanguard University of Southern
California
Costa Mesa, CA

Ahlam Jadalla, PhD, RN
Associate Professor
School of Nursing
California State University
Long Beach, CA

Purposes/Aims: To examine the difference in subcutaneous insulin (SQI) medication error rates when double-checking (DC) is required before administration/omission compared to when DC is no longer required (termed “single-checking” here).

Rationale/Background: Double-checking SQI before administration/omission is a widely used tradition not well examined in literature. DC, which requires two nurses to separately check each component of the workflow, is time-consuming and disruptive to both nurses involved. Moreover, new technologies in acute settings (i.e. barcode scanning and computerized order entry) control factors that were once used to justify DC as a strategy to decrease SQI errors.

Undertaking/Best Practice/Approach/Methods/Process: This two-phase quasi-experimental project was conducted over seven weeks in a 27-private-bed progressive care unit at a southern California urban community hospital. During the first phase (control), registered nurses (RNs) were required to DC before SQI administration/omission. During the second phase (intervention), RNs implemented SC before SQI administration/omission. Electronic chart audits yielded a total of 1528 opportunities for SQI administration and omission among 92 adult patients. Outcomes included: length of time lapse between glucose check and administration of SQI, “wrong-time” (i.e. time lapse of >30 minutes; excluded prandial doses), “over-dosed,” “under-dosed,” “inappropriate omission,” and “wrong preparation” errors. The overall error rate was defined as the presence of any one of these errors. Chi-square and independent group *t* tests were used to detect significant differences between the two phases ($p \leq .05$).

Outcomes Achieved/Documented: Of 1528 opportunities, 960 were administered while 568 were omitted events; 154 (10.1%) had any one error type. No significant difference was found in overall error rate between the two phases ($\chi^2 [1] = 1.191, p = .275$). However, among error types, “wrong-time” was predominant (10.3%, $n = 99$). Among the 99 “wrong-time” errors, 79 (79.8%) occurred during day shift while 20 (20.2%) occurred during night shift. There were significantly more “wrong-time” errors ($\chi^2 [1] = 7.635, p = .006$) during DC (33.5%, $n = 52$) than during SC (20.9%, $n = 47$). RNs took an average of 11.7 minutes longer to administer SQI during DC than during SC ($t_{253} = 2.931, p = .004$). Furthermore, although DC was initially theorized to reduce serious medication errors, especially over-dosing and wrong-preparation errors, there was no significant difference in “over-dosed” and “wrong preparation” errors ($p = .207$ and $p = 1.00$, respectively, Fisher’s two-sided exact test) between the two phases. Additionally, there was no significant difference in “under-dosed” ($p = .465$) and “inappropriate omission” errors ($p = 1.000$, Fisher’s two-sided exact test) between the two phases, though small frequencies of these non-“wrong-time” errors may account for these findings.

Conclusions: Because DC did not prevent this study’s predominant SQI-related error type (i.e. “wrong-time”) but was, instead, associated with it, nurse leaders must focus on system approaches to mitigating errors. Reducing nurses’ workload and workflow interruptions may be more effective in ensuring safe SQI administration, rather than enforcing a time-consuming verification practice that is not based on current evidence. Future studies should explore solutions that decrease “wrong-time” errors, especially those occurring during day shift.

INNOVATIONS IN DIABETIC CARE

Does Chronic Infusion of Leucine Stimulate Increased Insulin Gene Expression?

*Ewelina Pena, BA
CU College of Nursing
Aurora, CO*

*Paul Rozance, MD
Professor of Pediatrics
University of Colorado School of Medicine
Aurora, CO*

*Brit Boehmer, PhD
Research Associate, Pediatrics
University of Colorado School of Medicine
Aurora, CO*

Purpose: The purpose of this randomized controlled trial was to determine if the administration of chronic leucine infusions to a sheep fetus would lead to an increased expression of fetal pancreatic insulin.

Background: Without early interventions, preterm and intrauterine growth restricted (IUGR) infants can have underdeveloped and poorly functioning pancreas not producing insulin normally. These infants are at risk to develop diabetes later in life, likely due to insufficient nutrient delivery during critical developmental periods. Placental insufficiency commonly causes decreased transfer of vital nutrients including amino acids, glucose, and oxygen to the fetus. Decreased transfer of these nutrients leads to IUGR and impaired pancreatic islet development. It is unknown which nutrient is most critical for pancreatic islet development and insulin production, although amino acids have been demonstrated to increase fetal pancreatic insulin production. Sheep were used to model human fetal pancreatic development in this study. In a previous study, an infusion of a full set of amino acids were demonstrated to increase fetal sheep pancreatic insulin production. In this study, sheep fetuses received infusions of leucine, an essential amino acid, to test the hypothesis that pancreatic insulin production would increase.

Methods: The sample consisted of twenty Columbian Rambouillet sheep with singleton pregnancies housed at a university perinatal research center in the United States. The sheep were divided into a leucine treatment group consisting of nine sheep and a saline treatment group (control) consisting of eleven sheep. Sheep fetuses received an infusion of either leucine or saline beginning around 126 days of gestation. Leucine was infused at variable rates to maintain an overall 50% increase of leucine in the fetal plasma. Infusions lasted 7-10 days, after which the sheep were euthanized. Organs from the sheep fetus were isolated and snap frozen in liquid nitrogen. RNA was extracted from the pancreatic tissue, complimentary DNA was obtained via reverse transcription, and the complimentary DNA was subjected to real time polymerase chain reaction (PCR) to measure insulin mRNA levels. The data were normalized to the housekeeping genes GAPDA and ACTA1. The protein concentration of insulin was measured using the enzyme-linked immunosorbent assay (ELISA). T-tests were used to determine significance.

Results: Leucine was infused for 10 days and reached a final rate of 2.5 $\mu\text{mol}/\text{min}/\text{kg}$. The plasma leucine concentrations were higher in the leucine treatment group relative to the saline treatment group ($P < 0.05$). There were no differences in plasma insulin, plasma glucagon, or pancreatic insulin production mRNA or protein concentrations between the two groups. Although the results did not support the hypothesis, this research is important to eliminate leucine alone as an option for treatment of impaired pancreatic insulin production in cases of IUGR.

Conclusion: Further research is necessary to determine if leucine, in combination with other nutrients and hormones, such as glucagon, might increase pancreatic insulin. Because sheep and humans have similar pancreatic development in utero, the findings from this study help further our understanding of pancreatic development in humans.

Abstracts of Podium Presentations

INNOVATIONS IN GERONTOLOGY

INNOVATIONS IN GERONTOLOGY

Medical Floor CAM Implementation and Assessment of Risk Factors

*Michaelynn Paul, RN, DNP, CCRN-K
Associate Professor of Nursing
Walla Walla University
Portland, OR*

Background: Fifty percent of older hospitalized patients experience delirium. This translates into an estimated cost of \$164 billion per year worldwide. Early identification of patients at risk for developing delirium allows for implementation of specific interventions to mitigate the adverse effects of delirium.

Purpose: The purpose of the quality improvement project was to initiate the use of the Confusion Assessment Method (CAM) screening tool and analyze potential risk factors for the development of delirium.

Methods: First, 24 Medical floor nurses at a 302- bed community hospital participated in a 90-minute multifaceted educational intervention. Didactic delirium information was interspersed with video demonstrations, case scenarios, and administration of CAMs using standardized patients. Administration of a delirium knowledge pretest and posttest occurred at the beginning and end of the educational intervention. This information provided knowledge acquisition scores. Second, within one week of the educational intervention the nurses began administration of CAMs on the medical unit. Nursing staff administered 1057 CAMs to 208 consecutively admitted patients during the 3-month study period. Additionally all 208 patients were screened for five potential risk factors of delirium from the multifactorial model of delirium.

Outcomes: Based on the educational intervention, overall mean scores improved significantly from pretest to posttest: $6.83(\pm 1.7)$ vs $10.33(\pm 1.09)$; $t(23) = -8.06$, $p = 0.000$. Nurses identified delirium and subsyndromal delirium in 25% of the 208 consecutively admitted patients to the medical unit. A year previously, only 1% of all patients admitted hospital-wide were identified as having delirium and no patients were identified with subsyndromal delirium. Consistent with the literature, patients who had a urinary catheter ($R = -0.175$; $p < 0.05$) and/or experienced an iatrogenic event ($R = -0.218$; $p < 0.002$) were more likely to develop delirium. Additionally, Benzodiazepine administration had a statistically significant correlation with the development of delirium ($\chi^2 = 8.55$, $p < 0.003$).

Conclusions: The results of this quality improvement project suggest that delirium education combined with the use of the CAM is effective in identifying delirium accurately in medical floor patients. Future studies will analyze the integration of the CAM into the electronic medical record and quantify the impact of delirium on patients, hospital staff, and hospital expenditures.

INNOVATIONS IN GERONTOLOGY

Experience of Aging in Place in the United States: Systematic Review & Meta-Ethnography

*Amy Rosenwohl-Mack, RN, MS, PhD Student, Nursing Health Policy Program,
Department of Social & Behavioral Sciences, amy.rosenwohl-mack@ucsf.edu;
Karen Schumacher, RN, PhD, MSN, Professor, Department of Physiological Nursing;
Min-Lin Fang, MLIS, Research Librarian, Education and Research Services;
Yoshimi Fukuoka, RN, PhD, FAAN, Professor, Department of Physiological Nursing/
Institute for Health & Aging
University of California, San Francisco*

Aim: The aim of this systematic review was to evaluate and synthesize the evidence on experiences of aging in place in the US and identify gaps in existing qualitative research.

Background: As the population of the United States (US) ages, policymakers and service providers have increasingly focused on supporting “aging in place” – remaining in one’s familiar home or community for the rest of one’s life. Such strategies reflect a widespread desire to avoid institutionalization and the belief that aging in place is less expensive. Mounting evidence indicates persistent inequities in aging and an increasingly diverse older population, and it is important to explore the lived experience of aging in place in various circumstances and from a range of perspectives. Given the number of qualitative studies on aging in place now reported, a systematic review and synthesis of results is warranted to identify common themes and important new directions for future research and practice. However, no such systematic review has been conducted to date.

Methods: Search strategies were developed for six bibliographic databases (PubMed, Embase, PsycINFO, CINAHL, Web of Science, Sociological Abstracts), with no limits on publication date. Eligible studies were peer-reviewed qualitative research with full-text available in English, reporting experiences of community-dwelling older adults living in the US and intending to remain in their own homes. Two reviewers independently used Covidence software to screen titles and abstracts then full texts of remaining studies; a third reviewer resolved any outstanding conflicts. Quality and bias were assessed using a modified version of the Joanna Briggs Institute Checklist for Qualitative Research. Qualitative data analysis was conducted using meta-ethnography, following Noblit and Hare’s method of translation and synthesis. See published systematic review protocol for further details (Rosenwohl-Mack et al., 2018); PROSPERO registration number: CRD42018102847.

Results: Out of 2660 papers screened, 38 studies were eligible for inclusion, representing 1206 participants. Participant ages ranged from 40 to 99, with most aged 60 or over. All but one of the samples were majority female. One third did not report participants’ race/ethnicity, and half of the remaining study samples were at least 90% white; however, 20% of the studies focused exclusively on experiences of racial/ethnic minority older adults. The studies were conducted in 16 states, but only three Southern states were represented.

The meta-ethnographic synthesis generated an overarching model of aging in place, in which: place is a continuum between public and private space, with shifting boundaries; social interactions, whether positive, negative, or absent, mediate experiences of community; and the balance between independence and accepting help is an ongoing process of renegotiation.

Implications: Aging in place is a dynamic process that is highly dependent on the quality of the social connections and the nature of the public and private spaces that are accessible to each older adult. Services for people aging in place should provide flexible support at every stage, tailored to the unique needs and resources of each individual.

More research is needed on experiences of aging in place in under-represented populations and regions, particularly the South.

Funding: This project was supported by a grant (K24NR015812) from the National Institute of Nursing Research (Dr. Fukuoka) and by the UCSF Graduate Dean’s Health Sciences Fellowship (Ms. Rosenwohl-Mack). The study sponsors had no role in the study design; collection, analysis, or interpretation of data; or writing and submitting the abstract.

Reference: Rosenwohl-Mack, A., Schumacher, K., Fang, M., & Fukuoka, Y. (2018). Experiences of aging in place in the United States: protocol for a systematic review and meta-ethnography of qualitative studies. *Systematic Reviews*, 7(1), 155. <https://doi.org/10.1186/s13643-018-0820-8>

INNOVATIONS IN GERONTOLOGY

Pet Keeping in Older Adulthood: Remaining Independent

Basilias Basin, PhD, RN-BC
School of Nursing
Oregon Health & Science University
Portland, OR

Purpose: To describe how older adults with chronic conditions remain independent while living with a pet.

Background: Nearly 50% of older adults live with multiple chronic conditions. These conditions can impact activities of daily living, including pet care. Caring for a pet independently requires older adults to maintain the physical abilities to perform pet keeping activities such as walking, bending over, and lifting a pet. As older adults become frail, they may be unable to perform activities of daily living, including pet care.

Methods: This study utilized constructivist grounded theory to explore the relationship between older adults and their pets. Semi-structured, individual interviews were conducted with 20 participants aged 60 or older, living with a pet, and managing at least one chronic condition. Data was analyzed using an inductive/abductive process and included coding, constant comparison, categorizing themes, and early theorizing.

Results: *Filling the Empty Spaces: A theory of human-animal interactions in older adults* represents the emerging theory describing the experiences and decisions of older adults with pets. Remaining independent is one category of the theoretical framework. Remaining independent is defined as the older adult maintaining sufficient physical and cognitive function to remain living independently, including the ability to keep and care for their pet. This category has three processes: *making modifications*, *living in the moment*, and *utilizing social-support resources*. Remaining independent was described as living in an environment where pets were welcomed and the participant was able to independently provide care for their pet. Participants' reported adaptive strategies to modify their activities for daily pet care such as using a wheelbarrow to transport heavy pet care items, lived in the moment by not worrying about the future, and utilized their social support resources to help care for their pet if the older adult was suffering from an ailment or exacerbation of their chronic condition. Many participants expected to live with their pets for the remainder of their own lives and found living without a pet to be an unimaginable option.

Implications: A majority of older adults would rather stay living in their home than live in institutionalized facility such as assisted living or skilled nursing. Healthcare professionals ought to acknowledge that some older adults will refuse assisted living if it means their pet is not welcome. It is critical for healthcare professionals to recognize that when recommending assisted living, an older adult must also consider relinquishing their beloved pet if the pet is not allowed in assisted living. Therefore, healthcare providers must assess the intentions of older adults to have pets throughout older adulthood and understand that older adults might choose to remain living independently and use adaptive strategies to stay with their pets.

Funding:

- Beta Psi Chapter, Sigma Theta Tau Naomi Ballard Nursing Research Award (no grant number)
- 2016 Hartford Award for Research and Practice (HARP) Award for Doctoral Dissertation (no grant number)
- 2015 - 2016 Oregon Health & Science University Dean's Award for Doctoral Dissertation (no grant number)

INNOVATIONS IN GERONTOLOGY

Phototherapy: Safe and Effective for Challenging Skin Conditions in Older Adults

*Sarah W. Matthews, DNP, APRN, FNP-BC
Assistant Professor
School of Nursing
University of Washington
Seattle, WA*

Purpose/Aims: The purposes of this study are to: 1) describe the most common dermatologic conditions treated with narrowband UVB (NBUVB) phototherapy in older adults, and 2) examine the effectiveness and safety of NBUVB in older adults.

Rational/Conceptual Basis/Background: The burden of skin disease increases with age, leading to increased healthcare utilization as older adults live longer. Yet, identifying safe and effective evidence-based dermatologic treatments for older adults is challenging due to age-related changes in the skin, comorbidities, polypharmacy, mobility issues and/or cognitive changes. Phototherapy, specifically NBUVB, has been shown to be an effective treatment for multiple challenging dermatologic conditions, however few studies have examined its effectiveness in older adults.

Methods: Retrospective study of all patients ≥ 65 years, treated with NBUVB phototherapy between January 1, 2015 and December 31, 2015 at a large health organization with four regional dermatology centers in the United States.

Results: Sample included 52 phototherapy patients ≥ 65 years. The median age was 70.5 years, and 56% were men. The most common diagnosis included psoriasis (50%), dermatitis (20%), mycosis fungoides (10%), and vitiligo (6%). Of the 52 participants, 81% achieved an effective response (clear to near clear response) from NBUVB within 11 weeks. Psoriasis cleared slightly more quickly than the other conditions, and vitiligo cleared significantly slower than the other conditions. Gender and previous history of phototherapy were not associated with the NBUVB effectiveness (e.g., clearance rate). Acute side effects included mild erythema (46%), moderate erythema (25%), and itching (6%). Mild to moderate erythema occurred more frequently in this sample of older adults than seen in younger patients treated with phototherapy. Neither erythema or itching were associated with slower rates of clearance or discontinuation of treatments.

Implications: In this sample, phototherapy was a safe and effective treatment for older adults diagnosed with a variety of dermatologic conditions. Our findings were similar to previous studies of older adults in the United Kingdom and Turkey. The rate of erythema was higher and is most likely due to the more frequent use of photosensitizing medications in older adults. It is therefore important for phototherapy nurses to consider this risk more carefully in this population and adjust the treatment dosing accordingly. Future education and training of nurses to support phototherapy in the home for older adults could significantly improve access to phototherapy and therefore reduce clinic visits and healthcare utilization for this population.

INNOVATIONS IN GERONTOLOGY

Effects of Vitamin D Supplementation on Cognition in a Robust Aging Community Sample

Rosario Rose Sakamoto, DrPH, MSN, CCRN, NP-BC

Assistant Professor and Coordinator, Robust Aging Program, School of Nursing

Barbara J. Cherry, PhD

Professor, Psychology/Gerontology

Stephanie Vaughn, PhD, RN, CRRN, FAHA

Director and Professor, School of Nursing

California State University, Fullerton

Fullerton, CA

Purposes: The purpose of this pilot research study was to explore vitamin D supplementation's effects on global cognition, episodic memory and executive function among robustly aging community-dwellers. The goal was to increase awareness of healthy lifestyles through appropriate dietary practices/nutritional intake and mobility to prevent cognitive decline.

Background: Vitamin D supplementation is one viable strategy that has been suggested to delay the progression of cognitive dysfunction. By 2050, the number and proportion of older adults is estimated to increase to 80 million, or 20% of the population. One in four older adults experiences some type of a mental disorder, expected to increase to 15 million in 2030. About one in six California adults has a mental health need. Current preventative services for this population are extremely limited.

Methods: *Participants-* Recruited a total of 60 volunteers, 12 individuals qualified for supplementation. Subjects were members of the University's Osher Lifelong Learning Institute (OLLI-CSUF) residing within Orange County, CA. *Design-* Double-blinded randomized pretest-posttest placebo-controlled pilot study. *Intervention-* Vitamin D3 5000 IU (Bio-tech, Pharmacal) administered orally daily for six months. *Setting-* CSUF Gerontology center: Robust Aging Program office, and Student Health Center Laboratory. *Measures-* Chemiluminescence LIASON[®] assay. Cognition Tests: Mini-Mental State Exam (MMSE) assessed global cognition, executive function with Letter-Number Sequencing, Stroop Color-Word tests, and episodic memory with immediate and delayed Logical Memory tests. *Procedure-* Screening done per inclusion and exclusion criteria and IRB-approved study protocol. Informed consent and laboratory blood tests consent were signed. Pre-screening questionnaires determined eligibility. Health history including medical and lifestyle questions administered. Pre-test and post-tests included a physical exam (PE) and a battery of cognitive tests. Monthly follow-up either in the clinic or by phone/email and refills ensued. *Data Analysis-* Using SPSS, chi-square for categorical data, paired t-tests and for change in pre-test/post-test results, repeated measures ANOVA.

Results: Participants were between 60 – 88 years, mean =70 years, BMI mean = 26, with more females (78%) than males (22%). Individuals were predominantly White (62%), highly educated with post-college education (56%), and physically, moderately active. Serum vitamin D levels increased significantly from baseline mean 24ng/ml (60nmol/L) to 60ng/ml (150nmol/L). Six months' vitamin D supplementation demonstrated a significant improvement in global cognition for the treatment versus placebo groups, $p = 0.04$, with a trend for improvement in Stroop measures, p 's = .097, .093. *Limitations-* Small sample size. However, strengths include: good compliance and use of six cognitive tests, RCT-placebo controlled, serum-D insufficient/deficient participants. **Conclusion:** Vitamin D₃ (cholecalciferol) 5000 IU increases serum vitamin D levels and may improve cognition.

Implications/Significance/Further Research: Healthy older individuals who had intact cognition, supplemented with a high dose of vitamin D₃ (cholecalciferol) and followed for six months showed improvement on the global mental status and trended towards improvement in executive function. Nurses must be aware that higher dosage of vitamin D₃ (cholecalciferol) supplementation is safe and well tolerated –an option to use in managing vitamin D deficiency in the prevention of cognitive changes. Future research with diverse large population is needed to determine cholecalciferol's specific cognitive effects.

INNOVATIONS IN GERONTOLOGY

Exploring Wellness among Older Adult Informal Caregivers

Laura J. Blank, PhD, CNE
Associate Clinical Professor
School of Nursing
Northern Arizona University
Flagstaff, AZ

Julie Fleury, PhD, FAAN
Professor
College of Nursing and Health Innovation
Arizona State University
Phoenix, AZ

Purpose: The purpose of this research was to explore wellness in older adult caregivers. Understanding wellness from the perspective of older adult informal caregivers is essential to both broaden our conceptual understanding and develop relevant and needed interventions to promote wellness in a vulnerable population.

Background: By 2050, one fifth of the U.S population will be 65 years and older (Pew Research Center, 2015), with increases in chronic conditions and associated social and medical needs. Older adults prefer to age in place (Administration on Aging, 2015), creating a demand for loved ones, often family, to serve as informal caregivers. Current research and policy statements from the Institute of Medicine (2014) and the National Alliance for Caregiving (2015) characterize caregiving as a burden; reducing wellness and leading to adverse physical, mental, and psychosocial outcomes. This focus on deficit and burden limits understanding of approaches to caregiving, ways of living, and values promoting wellness among older adults. Wellness, a protective factor in older adults, fosters resilience, social connection, and reduced risk of chronic illness. Naylor (2012) calls for qualitative approaches to understand the experiences and meanings of wellness in caregivers as essential sources of knowledge.

Methods: Qualitative descriptive design provided a basis for exploring wellness among older adult caregivers. Descriptive qualitative methods fostered description of participant experiences in everyday language with minimal interpretation (Sandelowski, 2000). Participants were recruited through community-based agencies serving informal caregivers. Focus groups and individual interviews explored wellness among older adult caregivers to data saturation. Twenty-one informal caregivers participated in the research. Participants included 16 (76%) women and 5 (24%) men, ranging in age from 46 - 83 years (mean age = 71.8 years, $SD = 10.0$), and 19 Caucasian (90%). The majority of caregivers were caring for a spouse (76%). Trustworthiness of findings was supported using approaches to objectivity, dependability, credibility, and transferability (Lincoln & Guba, 1985).

Results: Older adult caregivers characterized wellness as a dynamic human health pattern, reflected in the themes *becoming*, *integrating*, and *relating*. Becoming reflects the process of realizing potential, developing and moving toward meaningful goals. Older adults described wellness as integrating new life experiences and approaches to self-care, as a way to balance valued aspects of life with the challenges posed by caregiving. Relating reflected reciprocity and interdependence of older adults with others, as they gave and received support from friends, family, and social networks.

Implications: This research advances a more complete understanding of wellness among older adult informal caregivers. Wellness, expressed as movement toward potential as an older adult and as a caregiver, reflected meaningful activities, valued experiences, and connection with others. The knowledge generated from this research is relevant for interventions promoting wellness.

Funding: Arizona State University College of Nursing and Health Innovation, Hartford Center of Gerontological Nursing Excellence at Arizona State University.

Abstracts of Podium Presentations

INTERPROFESSIONAL INITIATIVES

INTERPROFESSIONAL INITIATIVES

Interprofessional Preceptor Toolkit: A Resource for Advanced Practice Preceptors

Megan Miller, MEd, MPH

Program Operations Specialist

Biobehavioral Nursing and Health Informatics

Mayumi A. Willgerodt, PhD, MPH, RN

Associate Professor

Family & Child Nursing

Susan Pambianco, ARNP

Teaching Associate

Medicine

Brenda Zierler, PhD, RN, FAAN

Professor, Biobehavioral Nursing

and Health Informatics

University of Washington

Seattle, WA

Purpose: The purpose of this pilot project is to enhance the teaching skills of advanced practice nurse preceptors, and increase their capacity to deliver interprofessional clinical education to DNP students interested in heart failure (HF) care.

Rationale: Clinical management of HF is complex and expensive. Achieving positive outcomes requires a collaborative, interprofessional team that includes clinic staff, the patient, and patient caregivers. Due to the increasing prevalence of HF, there is a growing need for care providers knowledgeable in up-to-date guidelines for HF team-based care. Advanced practice nursing students are the next generation of care providers; their clinical education and exposure to HF team-based care is essential for their development into skilled providers knowledgeable in interprofessional practice. However, nurse preceptors, are typically volunteers who have limited training in learning theory and practices, interprofessional education, and teaching strategies for collaborative practice.

Approach: In response to the identified needs, academic and practice partners from the University of Washington (UW) Center for Health Sciences Interprofessional Education, Research and Practice and UW Medicine received HRSA funding to create an Interprofessional Preceptor Toolkit (IPT). Advanced practice nurses and faculty with expertise in interprofessional education were recruited to form the Toolkit Planning Committee in early 2016; a model for instructional design was implemented to lead project activities in 4 distinct steps: 1.) ANALYSIS: Input from a pool of preceptors was collected to identify gaps in knowledge, assess audience characteristics and learning constraints, and investigate delivery preferences. 2.) DESIGN: A list of essential competencies were developed around learning theory and included evidence-based teaching strategies, building collaborative relationships, feedback and evaluation methods, and incorporating interprofessional practice. Toolkit content reflecting key competencies was organized through a series of storyboards. 3.) DEVELOPMENT: Authoring software for online modules was selected; content was assembled into three distinct modules: *Tools for Learning in the Clinic*, *Preparing for a Successful Clinical Learning Experience*, and *Feedback and Evaluation*. The modules were routed for an initial round of testing to gain feedback on user experience, performance, and content. 4.) IMPLEMENTATION: The modules were disseminated to nursing preceptors at the UW Medical Center Regional Heart Center and to other local medical centers, nursing faculty, and state interprofessional collaborative practices. Plans for a “flipped” classroom skills workshop utilizing the IPT were initialized, and the toolkit was presented to fellow HRSA grantees for the training of nursing preceptors.

Outcomes: To date, nurse preceptors have started utilizing the IPT; one preceptor, who also served as a contributing author, was nominated by advanced practice students for a Preceptor of the Year Award through the UW School of Nursing. Going forward, feedback from learners will be collected via online surveys and used to assess the toolkit effectiveness and performance.

Conclusion: The IPT is a novel tool, as few preceptor training resources incorporate strategies for interprofessional practice. It will prove to be an essential asset for training practice-ready DNP providers who are skilled at providing complex HF care in community settings. Further, the IPT may be utilized by preceptors in other specialties.

Funding: This project was part of program activities supported through a federal grant lead by Dr. Brenda Zierler titled, “Education-Practice Partnership to Improve Advanced Heart Failure Training and Outcomes for Rural and Underserved Populations” (HRSA, D09HP286700100).

INTERPROFESSIONAL INITIATIVES

Learner Perspectives from an Interprofessional Collaborative Practice Initiative

Debra Bakerjian, PhD, APRN, FAAN, FAANP, FGSA
Project Director, Clinical Professor
dbakerjian@ucdavis.edu

Ana Marin Cachu, MPH
Data Research Analyst

Jennifer J. Edwards, MS, RN
Clinical Nurse Educator/Coordinator

Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA

Purposes/Aims: The overall goal of this project is to develop, test and disseminate a community-based collaborative primary care (PC) practice model. This includes a collaborative practice curriculum for FNP, PA, medical students, and medical and pharmacy residents that incorporates both didactic and hands on learning centered around the four Interprofessional Education Collaborative (IPEC) Core Competencies. This learning takes place in academic settings and through clinical rotations conducted in partnership with a local Federally Qualified Health Center. The 2017-2018 academic year was the pilot year of this project, which aims to enhance provider communication and teamwork to advance population health, reduce healthcare costs and improve the patient experience.

Rationale/Background: Education that is provided solely through simulation/classroom work has been described by students as artificial. They feel in-clinic experiences would better prepare them for practice. The implementation of clinical interprofessional programs for students face many challenges including the scheduling of students across disciplines, discipline specific communication, and the availability of clinical placements and faculty preceptors. There is little research exploring the experiences of students as an interprofessional team, integrated into a primary care community setting. In this project, SON students and SOM residents worked alongside faculty and clinical staff in interprofessional collaborative teams to provide patient centered care at a community-based FQHC.

Methods: Knowledge, skills and attitudes of Interprofessional Education and Practice (IPEC) core competencies among learners were evaluated using qualitative methods. The four competencies of communication, roles and responsibilities, ethics and values and teams and teamwork were used as a framework for the coding scheme. Focus groups transcripts, reflections written by learners, email communications and comments on evaluation surveys were analyzed using Nvivo12. Two researchers independently coded the data, refining the codes using an iterative process.

Results: IPEC competencies Roles and Responsibilities (R&R) and Teams and Teamwork (T&T) were the most commonly identified codes in the data. R&R included themes of understanding the roles of different healthcare professionals, and communicating their own role to those team members. A student noted “overall the biggest takeaway for me was being able to observe each clinic member utilize their strengths and work together to take care of each patient in their own unique collaborative way.” The T&T competency highlighted the challenge of coordinating patient care among the team members. Students found value in understanding the importance of each member of the team, and the specialized knowledge of resources and clinical skills each contributed.

Implications: This project identified a gap in current educational systems which silos clinical placements between health professional students. While students appreciate IPE in the classroom, they identified that the in clinic interprofessional experiences offered valuable learning that was different from what they received didactically. Health professional programs should make an effort to integrate learners of multiple health professions in primary care clinical placements.

Funding: This project was funded through a Health Resources and Services Administration Primary Care Training Enhancement Grant # T0BHP30023.

INTERPROFESSIONAL INITIATIVES

An Interprofessional Practice and Education Model (IPEM)

*Tamara Rose, PhD, RN
Assistant Professor, School of Nursing
Oregon Health & Science University
Klamath Falls, OR*

*Darcy Mize, EdD, MSN, RN
Assistant Professor, School of Nursing
Oregon Health & Science University
Klamath Falls, OR*

*Krista Beaty, RDH, BSDH, MS
Clinical Instructor, School of Dental
Hygiene, Oregon Tech
Klamath Falls, OR*

*Joseph Reid, MAS, MS,
Associate Professor, Mathematics
Oregon Tech
Klamath Falls, OR*

Purpose/Aims: Principles focused on improving the health status of Americans by increasing oral health literacy and enhancing the role of non-dental health care professionals was the underpinning of this study. An innovative Interprofessional Practice and Education Model (IPEM) was developed among nursing and dental hygiene students for collaborative communication, teamwork, and enhancement of student knowledge about oral and systemic health. Though effective models exist for interprofessional education in the classroom and community setting, this study proposed to add to the evidence base by developing, implementing, and evaluating a model where the student learner is additionally situated in the primary care setting.

Background: Oral health as a key to overall health has gained attention since the IOM report “Advancing Oral Health in America,” challenging non-dental professionals to enhance oral health education and practice. A learning outcome identified for baccalaureate nursing and dental hygiene students is developing an appreciation for interprofessional teamwork and recognizing its potential for maximizing positive health outcomes for patients. Interprofessional education models must be compatible with curricular learning outcomes for students and with systems of health care delivery. In this study, learning environments conducive to dialogue and collaborative problem solving occurred in seminars, simulations, and in community health care clinics.

Methods: The IPEM placed interprofessional teams of students in primary care clinics after shared learning in classroom and simulation occurred; it was developed, implemented, and evaluated by nursing and dental hygiene faculty. Study participants included, students ($n= 34$), key professionals ($n=7$), and patients ($n=29$). Learning objectives for nursing and dental hygiene students’ program outcomes were clearly aligned. This study used a non-experimental descriptive design, measuring pre and post self-assessment of interprofessional practice and education (IPE) competencies in baccalaureate students from both disciplines, student knowledge about oral and systemic health, the impact of team-based care for community partner clinics, and patient satisfaction.

Results: Through the process of interprofessional education, transformative learning occurred for students. The students examined their assumptions about each other’s professions and broadened their knowledge and appreciation for each professional’s role. Ultimately, critical thinking skills were strengthened and deeper learning occurred for all students. On average, the nursing student mean score increased in both the self-assessment and knowledge scores between the pre and post-tests, whereas no significant changes were noted in the dental hygiene group averages. Qualitative responses gathered over the course of the project in debriefings and small group discussion indicated teamwork and collaboration was valuable for both disciplines. In general, patients had a positive response to the two-question survey and provider experiences were reported with variation.

Implications: Designed specifically to fully meet IPE objectives by translating the interprofessional competencies for collaborative practice, the IPEM can be seamlessly integrated into nursing and dental hygiene curricula. Expansion of IPEM to another campus with nursing/dental hygiene programs has been initiated, based on study outcomes demonstrating overall patient satisfaction and a positive interprofessional student experience.

INTERPROFESSIONAL INITIATIVES

Human Trafficking Readiness: Impact of a Survivor Co-Led Training Program

*Perry M. Gee, PhD, RN
Nurse Scientist
Nursing Research and Analytics
Dignity Health
Phoenix, AZ*

*Holly Austin Gibbs, BA
Director
Human Trafficking Response Program
Dignity Health
San Francisco, CA*

Purpose: The purpose of this project was to measure the differences in knowledge and confidence in nurses and other clinicians who may encounter victims of human trafficking in the clinical setting and who have taken a structured training program on this topic.

Background: Human trafficking is a complex world-wide problem that at its core is the exploitation of human beings. All persons regardless of age, ethnicity, gender or country of origin are potential victims of this horrific crime. Globally it is estimated that there are as many as 27 million victims and in the United States the numbers are estimated to be between 18,000 and 20,000 with California having the highest incidence of any state. This exploitation or slavery can take the form of sex and or labor trafficking as well as additional types of suffering. The literature states that at least half of the victims of human trafficking encounter the health care professional at some point while they are being trafficked. The problem is clinicians are not trained to identify the indicators or “red flags” of human trafficking and may be unaware of the unique care and treatment needed for these people. An evidence based training intervention was developed by clinicians and actual human trafficking survivors to address this knowledge deficit in a large California healthcare system.

Methods: With IRB approval, a four-hour training intervention was delivered by clinicians and human trafficking survivors at two Northern California hospitals, one in a large urban city and the other in the Central Valley of California. Using a tool developed in a previous study, the training participants were surveyed about their knowledge and confidence in treating this patient population prior to taking the course and again after the training completion.

Results: Nurses constituted the majority (73.9%) of the 254 professionals who engaged in this training. The majority (66.1%) indicated that they believed that human trafficking affects their patient population but only 18.9% reported that they had received training on how to treat such patients. The pretest / posttest analysis to assess participant’s ability to identify and treat victims of human trafficking revealed that at baseline 26.3% of the participants reported feeling either comfortable or very comfortable in **identifying** victims of human trafficking, compared to the posttest, wherein 93.2% indicated that they were comfortable or very comfortable ($p < .001$). At baseline, 23.6% of the participants reported feeling either comfortable or very comfortable **treating** victims of human trafficking, compared to the posttest, where 90.4% indicated that they were comfortable or very comfortable ($p < .001$).

Implications: The significant results of this survivor co-led training intervention has prompted this team to deliver survivor/clinician-co led training to all hospitals in our three-state system starting with the emergency and obstetrics departments; areas most likely to encounter these individuals. Active participant interaction during the intervention has added strength to our red-flag identification, improved documentation and prompted the development of an expanded trauma-informed care approach.

Abstracts of Podium Presentations

**MENTAL HEALTH FROM PROVIDER
TO PATIENT**

MENTAL HEALTH FROM PROVIDER TO PATIENT

Second Victim Phenomena: A Multidisciplinary and Mixed Method Study

Tanna Thomason, PhD, RN-BC, CNS, PCCN, Clinical Nurse Specialist

Lisa M. Kelley, MSN, RN, BSHCA, CLNC, Quality Specialist

Jaynelle F. Stichler, DNSc, RN, NEA-BC, FACHE, FAAN, Research and EBP Consultant

Sharp Memorial Hospital

San Diego, CA

Tanna.thomason@sharp.com

Purposes/Aims: This mixed methods research study explored the incidence and symptoms associated with the second victim (SV) phenomena in hospital employees from a large 5-hospital healthcare system in southern California. Using the validated Second Victim Experience and Support Tool (SVEST), this study examined 8 domains including correlations with SV experiences and physical/psychological distress, self-reported absenteeism, and intent to turnover. Two open-ended qualitative questions examined desired forms of support following an event.

Rationale/Conceptual Basis/Background: Health care providers involved in an unanticipated adverse patient event, medical error and/or a patient related injury may be traumatized by the event and become “second victims”. SVs often experience various psychological and physical symptoms. Less than 10% of healthcare providers will reach out for help following a serious safety event. This study supported the organization’s Highly Reliable Organization initiative to decrease shame and blame while increasing transparency, learning, and resiliency.

Methods: After obtaining IRB approval, the 50-item SVEST instrument was emailed to, Registered Nurses, Pharmacists, Physicians, Social Workers and Therapists with a cover letter indicating implied informed consent by completing the 6-minute survey. Employees were told the self-reported information would assist with the development of a program to providing support to clinical staff following an event.

Results: 890 employees completed the survey (10% response rate) with 72% self-identifying as a SVs from an event occurring within the past 5 years (range 1 year – 15+ years ago). Respondents were Registered Nurses (73%); Therapists (PT, OT, ST, RT) (4%); Social Workers (4%); Physicians (4%) and Pharmacists (3.5%). Areas of employment included Critical Care (ICU/PCU) 25%; Acute Care (11%); ED (7%); Surgical Services (6%); Labor & Delivery (4%); Neonatal ICU (4%); and Acute Rehabilitation (3%). The mean age working in the profession was 17 years with 12 years in their current role. After the event, most (73%) had either physical and/or psychological distress and 66% sought consultation from a co-worker followed by manager (29%) and employee assistance program (13%). Social Workers had lower psychological distress as did the aggregate of employees working at the acute psychiatric hospital ($p=.007$) when compared to other disciplines and hospitals. Physical distress had the greatest prediction of intent to turnover ($B=.33, p=.000$). Colleague support was also predictive of reduced turnover intention ($B=-.123, p=.05$). Qualitative themes for additional forms of support included improved management training; more 1:1 peer support; increased debriefings (individuals and group); immediate time away from department following the event to allow for emotional decompression; and additional counseling with internal and external professionals as well as remote support.

Implications for Translation to Practice/Further Research: After an event, SVs have a wide range of career impacting responses ranging from learning and thriving to dropping out of the profession and self-harm. The National Quality Forum has called for organizations to establish organized support structures for clinicians. Organizations play a crucial role in responding to and aiding SVs and must by provide customized interventions and support.

MENTAL HEALTH FROM PROVIDER TO PATIENT

Relationships among Workload, Teamwork, and Missed Nursing Care in Nursing Homes

*September T. Nelson, PhD, MSN
Assistant Professor
School of Nursing
University of Portland
Portland, OR*

Purpose/Aims: The purpose of this study was to describe the relationships among perceptions of workload, teamwork, and total missed nursing care as reported by nursing staff who work in a nursing home environment.

Rationale/Conceptual Basis/Background: Missed nursing care is defined as necessary care activities that are omitted in part, in whole, or delayed. The missed nursing care model predicts that components of the work environment such as workload and teamwork affect missed nursing care. Missed nursing care then affects quality of care and patient outcomes. Empirical evidence supports these relationships in the acute care setting. However, these relationships have not been thoroughly tested in the nursing home environment where some of our most vulnerable citizens receive care.

Methods: This cross-sectional descriptive study included a convenience sample of 128 licensed nursing staff (RNs and LPNs) who reported providing direct resident care. These participants were recruited from 16 nursing home facilities in Oregon. Eligible participants were asked to complete a confidential paper and pencil survey that included items related to demographic information, unit characteristics, facility characteristics, and measures of the perception of workload, teamwork, and missed nursing care. The Workload Subscale of the Individual Perceptions of Workload Scale was used as a measure of perceived workload. The Nursing Teamwork Survey measured individual perceptions of teamwork within the participant's unit. The MISSCARE Survey – Part A, measured missed nursing care and asked participants to rate how frequently individual activities were missed by the team overall. The rating of how frequently each individual activity was missed was then added to calculate the total missed care score. The variables were measured and analyzed at the individual nurse level. Bivariate correlational analyses were completed to identify relationships among the variables of interest.

Results: Perceived workload was positively related to missed nursing care ($r = .53$, $p < .001$). As the perception of workload increased, the report of missed nursing care increased. Alternately, nursing teamwork was inversely related to missed nursing care ($r = -.69$, $p < .001$). As teamwork increased, the amount of reported missed care decreased.

Implications: Multiple factors, including staff perception of workload and teamwork, influence missed nursing care in the nursing home environment. In order to limit missed care and provide quality care to this vulnerable population, nursing staff workloads need to be carefully monitored and adjusted. In addition, the level of teamwork is an important predictor of missed nursing care. Recommended teamwork building strategies include identifying structural barriers and improving communication, situational awareness, and mutual support. Fostering teamwork among staff may aid in their ability to deliver care and result in less missed nursing care. Together, these strategies have the potential to improve the quality of care and adverse outcomes for these most vulnerable residents.

MENTAL HEALTH FROM PROVIDER TO PATIENT

“Pawsitive” Impact of Animal-Assisted Therapy among Antepartum Patients

*Ellen K. Fleischman, PhD(c), MBA, MSN, RN, NE-BC
Director*

*Maternal Infant Services & Support Programs
Sharp Mary Birch Hospital for Women & Newborns
San Diego, CA*

*Joanna Hunt, BSN
RNC-OB, C-EFM
Nurse Educator
Perinatal Special Care Unit
Sharp Mary Birch Hospital
San Diego, California*

*Gabriella Malagon-Maldonado,
PhD, DNP, RN, NEA-BC
Director Education, Research
& Professional Practice
Sharp Mary Birch Hospital
San Diego, California*

*Jacqueline Hiner MSN/Ed, APRN,
RNC-OB, CNS
Clinical Nurse Specialist
Women's & Infant's Services
Sharp Chula Vista Medical Center
Chula Vista, California*

Purposes/Aim: The purpose of this study was to evaluate whether animal-assisted therapy (AAT) improves self-reported feelings of stress, anxiety, and overall mood in hospitalized antepartum women.

Rationale/Conceptual Basis/Background: Approximately 20% of all pregnancies are high-risk, requiring women to be hospitalized, separated from their families, socially isolated, and not in control of daily decisions; this often exacerbates pregnancy-related anxiety. The benefits of AAT on improving overall mood in non-obstetric populations have been demonstrated in the literature; however, minimal research exists regarding the utilization of AAT and relevant outcomes in the obstetric patient population. The *Patient and Family-Centered Care* conceptual framework composed of conceptually-related variables was used to study factors associated with AAT.

Methods: Descriptive correlational repeated measure design. A convenience sample of English-speaking pregnant women (n=33) were consented and completed investigator-developed instruments comprising of a 10-item demographic survey and a 23-item Antepartum Pet Therapy Questionnaire. The same questionnaire was administered before AAT (pre-intervention), immediately after AAT (immediate post-intervention), and 48-hours after AAT (delayed post-intervention). The AAT intervention consisted of a 10-minute bedside visit with a trained therapy dog and handler. Participants rated a variety of emotions such as boredom, stress, anxiety, nervousness, and worry on a 5-point Likert scale ranging from 0-4, with lower scores indicating lower levels of emotions and higher scores indicating higher levels of emotions. Quantitative data was analyzed using descriptive and inferential statistical analyses. Qualitative data was collected based on patients' experiences with AAT and analyzed using thematic analysis.

Results: The majority of participants were pet owners (87.5%, n=28); only 9.4% (n=3) had experienced AAT previously. The instrument had high internal consistency. Cronbach's alphas were .89, .91, and .88 respectively for pre-intervention, immediate post-intervention, and delayed post-intervention. Total scale mean scores were $1.73 \pm .69$, $.59 \pm .45$, and $.98 \pm .54$ for the pre-intervention, immediate post-intervention, and delayed post-intervention respectively. Significant correlations related to overall mood were found between pre-intervention, immediate and delayed post-interventions ($r = .428$, $p \leq .05$), ($r = .544$, $p \leq .01$) and between immediate post-intervention and delayed post-intervention ($r = .619$, $p \leq .01$). There were no significant relationships between demographic variables and pre or post-intervention scores. Additionally, the themes that emerged from the qualitative data included feeling relaxed, comfortable, and responsive to AAT.

Implications: Findings from this study demonstrate statistically significant improvement in self-reported feelings of stress, anxiety, and overall mood from pre-intervention to post-intervention. Since antepartum stress and anxiety influence both maternal and newborn health, AAT may offer a promising modality to decrease negative emotions and improve overall well-being.

MENTAL HEALTH FROM PROVIDER TO PATIENT

Stigma, Social Support, and Perinatal Mood and Anxiety Disorders (PMAD)

Ellen K. Fleischman, PhD (c), MBA, MSN
Director, Maternal Infant Services &
Support Programs
Sharp Mary Birch Hospital
San Diego, CA

Cynthia D. Connelly, PhD, RN, FAAN
Professor & Associate Dean for Research
Hahn School of Nursing & Health Science
University of San Diego
San Diego, CA

Purposes/Aim: The purpose of this study was to examine relationships between stigma of mental illness, social support, select demographics, and perinatal mood and anxiety disorders (PMAD).

Rationale/Conceptual Basis/Background: Nationally, 1 in 5 childbearing women are affected by PMAD, making these disorders the most frequent complication of childbirth, yet approximately 20% of those identified do not seek treatment. Avoiding the label of mental illness is purported to contribute to the low rate of identification and treatment. Extant research shows an inverse relationship between high levels of social support and PMAD; relationships between stigma, social support, and PMAD have not been studied.

Conceptual Framework: This study was guided by the seminal work of Goffman (1963) on stigma of mental illness and Corrigan (2004) on concepts of internal and external stigma.

Methods: A descriptive correlational cross-sectional design. A convenience sample of 105 English and Spanish speaking women were recruited and enrolled from a Southern California woman's specialty hospital postpartum unit. Upon providing informed consent, participants completed surveys comprised of four standardized measures: Edinburgh Postnatal Depression Scale (EPDS), Generalized Anxiety Disorder-7 item scale (GAD-7), City Mental Illness Stigma Scale (City MISS), the Multidimensional Scale of Perceived Social Support (MSPSS), and demographics. City MISS measures three dimensions of stigma: Internal (IS), External (ES), and Disclosure (DS). Descriptive and inferential statistical analyses.

Results: The sample was diverse: 30.9% White, 43.6% Latino, 3.6%, Black, 10% Asian, 7.3% multiethnic. Mean age 30.7 ± 5.02 (range 18-46). Primary language, 70% English, 19.1% Spanish, and 6.4% other. Sixty-one (55.5%) reported no history of depression or anxiety, 3(2.7%) reported depression, 15 (13.6%) reported anxiety, 11 (10%) reported both depression and anxiety, and 4(3.6%) reported other mental health history. Significant correlations were found between EPDS and GAD-7 ($r=.674$), MISS ($r=.403$), IS ($r=.55$), ES ($r=.337$), DS ($r=.226$) respectively at $p<.01$. EPDS, GAD, IS, and DS scores were inversely related to MSPSS ($r=-.283$), ($r=-.268$), ($r = -.215$), ($r = -.241$) respectively at $p<.05$. Chi-square indicated significant differences between ES and marital status, $X^2(36, n=101)=58.07, p<.01$, unplanned pregnancy, $X^2(18, n=99)=29.99, p=.037$, and history of depression, $X^2(72, n=91)=99.11, p=.019$.

Implications: Despite an increased awareness of PMAD, barriers to identification and treatment persist. In this study 44.5% reported a prior history of depression, anxiety, or other mental illness predisposing women to PMAD. Three dimensions of stigma were associated with PMAD. EPDS, GAD, IS, and DS were inversely related to MSPSS score, indicating higher levels of social support may mitigate stigma, depression, and anxiety. Screening in the perinatal period is critical in identifying and treating PMAD; this study supports the need to demystify and destigmatize perinatal mental illness and increase social support efforts to improve obtaining treatment.

Funding: Funding in part for this project was provided by Howell Foundation Research Award to EF and University of San Diego Hahn School of Nursing & Health Science, Dean Merit Scholar Award.

Abstracts of Podium Presentations

**NURSE PERCEPTIONS ON EDUCATION,
PRACTICE, AND RESEARCH**

NURSE PERCEPTIONS ON EDUCATION, PRACTICE, AND RESEARCH

Student Nurses' Thoughts Regarding Usability of Family Health History Gathering Tools

Gaye Ray, MS, FNP-C, PH-C
Assistant Professor
College of Nursing
Brigham Young University
Provo, UT

Camry Shawcroft, SN
College of Nursing
Brigham Young University
Provo, UT

Karen Whitt, PhD, FNP-C, AGN-BC
Associate Professor
School of Nursing
George Washington University
Washington, D.C.

Sarah Rushton, SN
College of Nursing
Brigham Young University
Provo, UT

Purpose: To explore nursing students' thoughts regarding the usability of six family health history gathering tools (FHHGT) after using the tools to conduct family health history (FHH) interviews.

Background: FHH interviews are a highly sensitive and specific method to identify risk for genetic disorders and chronic diseases, and are an efficient way to illustrate patterns of disease risk within families. Despite the importance of FHH in providing patients with specialized care, clinicians only spend an average of 2-3 minutes collecting this vital information. Although primary care providers agree on the importance of FHH interviews, they are underutilized in practice, resulting in missing information that could have been used to improve patient care. While many FHHGT have been developed to remedy this issue, field tests of these tools and their various components have not been reported in the literature. As a result, additional testing is needed to identify practical, effective tools that primary care providers can use to collect FHH in the clinical setting.

Project/Undertaking Description: Thirty-six FHHGT were identified through a systematic review of the literature. Each tool was evaluated based upon its characteristics such as length, availability for use, paper/electronic, cost, any data reported in the literature on reliability or validity, and if the tool asked questions about specific chronic and genetic diseases. Many tools were proprietary and not available for our use. Six tools were selected for field testing based on availability and cost. Nine student nurse researchers used the selected tools to complete a total of 102 FHH interviews with college student participants. Tools were randomly assigned to student nurse researchers and each tool was used 17 times. After each interview session, student nurse researchers were asked to answer the question, "What are your thoughts regarding the usability of this tool?" Qualitative responses were categorized and grouped according to theme using a first and second cycle coding process.

Outcomes: Nursing student responses revealed four themes related to the usability of FHHGT. These themes include the tools' (1) organization, (2) ease of use, (3) question formatting, and (4) comprehensiveness. Importantly, student nurse researchers reported most participants asked for definitions of terms, clarification or further explanation of questions, or for examples of what answer type the question was looking for. As a result of these discussions, student nurse researchers believe the participants were able to provide more complete, detailed, accurate, and useful FHH.

Nursing Implications: Student nurse comments regarding the usability of various FHHGT provide evidence that tools (1) differ significantly in how and what they assess, (2) are believed to be more usable when comprehensive, and (3) yield more accurate, comprehensive, and useful FHH information with student nurse assistance.

Conclusion: The overarching goal of FHH are to collect accurate and thorough information for the purpose of providing better care. Characteristics of a user-friendly FHHGT include organization, ease of use, and question formatting. The help of a medical professional in completing FHHGT gleans more comprehensive and useful FHH information.

Funding: BYU Mentoring Environment Grant

NURSE PERCEPTIONS ON EDUCATION, PRACTICE, AND RESEARCH

Seizing Opportunity: Diverse Early-Entry Doctoral Students' Perceptions

Janet C. Mentec, PhD, RN, FGSA, FAAN
Professor
University of California, Los Angeles
Los Angeles, CA

Ebere Ume, PhD, RN
Assistant Professor & Associate Dean
Charles R. Drew University of Medicine
and Science
Los Angeles, CA

Linda Phillips, PhD, RN, FAAN
Professor Emeritus
University of California, Los Angeles
Los Angeles, CA

Sharon Cobb, MSN, PhD, RN
Assistant Professor
Charles R. Drew University of Medicine
and Science
Los Angeles, CA

Purpose: To evaluate the strengths and areas for improvement for an early-entry to the PhD nursing program based on early-entry students' perceptions.

Rationale/Background: Our School of Nursing has been committed to increasing the diversity of nurse scientists, by promoting early-entry to the PhD program since 2008. This early-entry initiative, Nurses Caring for Older Adults Young Scholar Program, was initially supported by funding from HRSA. In 2012, consistent with the NIH focus on developing researchers from under-represented minority (URM) groups and in partnership with a historically black university, the initiative was funded by the NIGM Bridges to the Doctorate Program. The purposes of the funding were to (1) increase the diversity of nurse scientists by increasing the number of URM students entering PhD programs after completion of pre-licensure studies and (2) meet the needs of the increasing diverse aging population, by preparing nurse scientists to ask research questions important for improving the health and decreasing health disparities of diverse aging populations.

Methods: This is a qualitative analysis of anonymous tape-recorded interviews with 12 participants of the Bridges to the Doctorate Program who entered doctorate studies and are in various years of study. The students were recruited via email message sent by our research assistant who provided a confidential area for the interview. The same research assistant transcribed and anonymized the interviews. We used an iterative content analysis to develop themes, which were developed by one investigator and validated through consensus by another investigator.

Results: Five themes emerged from the data. 1) **Not knowing:** Students indicated they did not know they could pursue a PhD in nursing until their professors discussed it with them and were unaware of the process of obtaining a PhD. 2) **Seizing the opportunity:** Almost universally, the participants indicated they wanted to take the opportunity for a PhD at this time, because otherwise they believed they wouldn't complete a PhD. 3) **Importance of mentorship:** The pre-doctoral mentorship provided by the Co-PIs was essential in helping students bridge into the doctoral program and having a cohort of bridge student peers helped sustain them through the program. 4) **Sense of not belonging:** After entering the PhD program, students indicated that other PhD students or faculty members made them feel they didn't belong because they hadn't practiced as nurses. Some indicated that their own feelings of being an "imposter" made them feel like they didn't belong. 5) **Financial issues:** Financial worries and whether to work was particularly important because the students had incurred large academic debt from their pre-licensure programs. Working not only provided living expenses, it also gave them credibility as a nurse.

Implications: Early-entry diverse students have specific needs that are not always recognized. Overwhelmingly, they indicated that they were not aware of availability of a PhD for nurses and would not have pursued studies or felt prepared if they were not offered the bridges program. These are important considerations to increase the diversity of our nurse scientists and meet the health needs of diverse older adults.

NURSE PERCEPTIONS ON EDUCATION, PRACTICE, AND RESEARCH

Praying with Patients: A Nursing Practice Theory

*Iris Mamier, PhD, RN
Associate Professor
School of Nursing
Loma Linda University
Loma Linda, CA*

*Carla Gober, PhD, MPH, MS, RN
Associate Professor
School of Religion
Loma Linda University
Loma Linda, CA*

*Kathy Schoonover-Shoffner, PhD, RN
Editor, *Journal of Christian Nursing*
Director, *Nurses Christian Fellowship*
Madison, WI*

*Elizabeth Johnston Taylor, PhD, RN
Professor
School of Nursing
Loma Linda University
Loma Linda, CA*

Purpose/Aim: To describe an emerging practice theory that describes how nurses pray with patients.

Background: Nurse-provided spiritual care includes support of patient religious beliefs and practices. Prayer is a religious ritual that has been shared between patients and religious nurses for centuries. Evidence from descriptive studies indicates that some nurses pray with patients, although many more pray for their patients privately. Currently, when nurses do pray with patients, there is no description of *how* they pray. It is likely that in the absence of guidance from their education, nurses draw on their own spiritual heritage when granting patient requests for prayer. This raises questions of ethics, form, content and effect.

Methods: A geographically diverse convenience sample of nurses responded to two open-ended questions in an online survey accessed through the home page of the *Journal of Christian Nursing*. Nurses were presented with a pre-surgical situation where the patient requested prayer from them; they were then prompted to answer, “What would you likely say or do?” and “If you agree to pray, how would you likely pray?” Respondents’ typed responses were analyzed using descriptive analysis.

Results: The vast majority (97%) of these mostly Christian and mostly U.S. American nurse respondents ($N = 381$) indicated being willing to pray with the patient described in the scenario. Most formulated a colloquial prayer. Before praying, some nurses first explored form (how the patient would like the prayer to proceed) and content (what the patient would like to include in the prayer). All prayers opened by referring to the divine in some manner, presented requests (e.g., for the patient’s protection, healing, and comfort, as well as guidance for the health professionals), and ended the prayer through some type of closure. Some prayers set the stage before proceeding to requests and “wrapped up” the prayer before closing it. Respondents ($n = 12$) who would not want to pray opted to call another person (e.g., chaplain) or provided an empathic statement.

Implications for Translation to Practice/Further Research: The emerging practice theory provides direction for clinicians who respond to patient requests for prayer; it also offers a template nurse educators who teach nursing students about praying with patients.

Funding: This study was supported by the *Journal of Christian Nursing* and *The Center for Spiritual Life and Wholeness* at Loma Linda University.

NURSE PERCEPTIONS ON EDUCATION, PRACTICE, AND RESEARCH

The Knowledge and Attitudes of Nurse Practitioners towards Antibiotic Stewardship

*Robert Hamilton, BS, RN
FNP Student
Associate Professor
College of Nursing
Brigham Young University
Provo, UT*

*Katreena C. Merrill, PhD, RN
Associate Professor
College of Nursing
Brigham Young University
Provo, UT*

*Beth Luthy
Associate Professor
College of Nursing
Brigham Young University
Provo, UT*

*Craig Nuttall
Associate Professor
College of Nursing
Brigham Young University
Provo, UT*

Purpose: To describe nurse practitioner knowledge and attitudes towards antibiotic stewardship. **Background:** The Centers for Disease Control and Prevention estimates that every year in the US, at least 2 million people acquire serious infections that are resistant to one or more antibiotics. More than 23,000 people die as a result of these antibiotic resistant infections. Treatment of resistant infections adds approximately \$20 billion in costs to the health care system. To slow the spread of antibiotic resistant infections it is important to improve the way antibiotics are prescribed and used. This concept is called antibiotic stewardship (AS). Nurse practitioners (NP) are uniquely suited to implement successful AS measures at the point of care. It is therefore important to understand what NPs knowledge and attitudes about antibiotics to foster AS activities.

Methods: A descriptive online survey was conducted using a convenience sample of NPs attending an NP conference in June 2018. The instrument, modified from previous studies, included 54-items measuring knowledge and attitudes of AS and demographics. NPs responded to knowledge and attitude statements about antibiotic use and resistance using a 5-point Likert-type scale (strongly disagree/strongly agree). Questions also included perceptions toward education resources (5- point Likert-type scale “never useful” to very useful”). The data was analyzed using descriptive statistics (percentages in each category and overall mean scores). Analysis of Variance was used to test differences in mean scores by gender, ethnicity and level of education. Pearson *r* correlation measured the relationship between knowledge, attitudes, perceptions, age, and years in practice.

Results: 204 NPs completed the survey. Participants were mostly female (84%), white (82%), Master’s prepared (66%), worked as a family nurse practitioner (63%) and worked in a private/community clinic (40%). The median years in practice was 9. Over 75% of NPs ‘strongly agreed’ that antibiotics are overused nationally, while only 22% felt that they were overused in their health care setting. While the majority of NPs (75%) ‘strongly agreed’ that knowledge of antibiotics was important, only 27% ‘strongly agreed’ that they used antibiotics optimally. Further, 36% of NPs ‘strongly disagreed’ that they over-prescribed antibiotics. It is interesting to note, however, that 33% of the NPs ‘somewhat’ to ‘strongly agreed’ that other NPs overprescribe antibiotics. NPs in this study reported they were most influenced to prescribe antibiotics based upon severity of illness, risk of C. Difficile and patient cost. NPs reported starting with broad-spectrum antibiotics and tailoring antibiotics when cultures are available and using the antibiogram for their setting. There was no difference in knowledge and attitudes of AS by gender, ethnicity or degree. There was no relationship between knowledge and attitudes of AS and NP age or years of practice.

Implications/Further Research: NPs in this study recognized that antibiotic resistance is a significant problem and antibiotics are often over-prescribed. However, there was a disparity between their knowledge and attitudes of their own practice compared to that of other NPs. More research is needed to understand how NP knowledge and attitudes about AS affect antibiotic prescribing and resistance patterns.

NURSE PERCEPTIONS ON EDUCATION, PRACTICE, AND RESEARCH

Pain, Dementia, and Nurse's Perceptions: An Embedded Mixed Methods Study

*Suzanne Parkman, PhD, RN ***

*Beth Mastel-Smith, PhD, RN, FNGNA**

*Anthony McGuire, PhD, CCRN-K, ACNP-BC, FAHA***

*Gloria Duke, PhD, RN**

The University of Texas at Tyler St. Joseph's College of Maine***

Background/Purpose: Pain in persons with dementia is often associated with need-driven behaviors and presents a unique challenge for nurses managing pain. Observational pain scales (OPS) are used to assess pain in this population. The purpose of this study was to explore the relationship between two OPSs: Abbey Pain Scale (APS) and Pain Assessment in Advanced Dementia (PAINAD), expressed need-driven behaviors (NDBs), and the relationship between the two OPSs and medication administration for residential PWD. Nurses' perceptions regarding ease of and barriers to use of the OPS were explored.

Conceptual Framework: Algase's Need Driven Behavior Model (NDBM) guided the study. NDBM posits that NDBs arise from the pursuit of a goal or expression of a need. The qualitative strand examined nurses' perceptions and was supported by the philosophical underpinnings of descriptive phenomenology.

Design/Methods: This study used an embedded mixed methods design involving a quasi-experimental quantitative strand in which residential persons with dementia served as their own controls and nurse caregivers participated in a descriptive qualitative strand. The setting was an in-patient memory care unit. A counter-balanced protocol was applied in which scales, APS and PAINAD or the PAINAD and the APS, were used to assess pain in two groups of residents for four weeks and then switched. NDBs and medication quantification (MQS III) were measured during the eight week period. During one-to-one interviews, nurses' perceptions regarding barriers and practicality of the two OPSs were explored.

Results: Quantitative data analysis was conducted using Pearson's *r* bivariate test of correlation. APS was significantly correlated with NDBs ($r(26)=.41, p<.05$) and approached significance with the mean MQS III scores ($r(26)=.35, p=.067$). PAINAD was not significantly related to either NDBs or MQS III ($p=.53, p=.43$ respectively). Study results had a large effect size ($d=.45$). Qualitative data was coded and analyzed thematically. Three core themes and six sub-themes emerged from the data: (a) assessing PWD for pain (sub-themes: assessment techniques, know the resident, pain assessment is a process, staff knowledge / education, assessing for pain versus other need, and measurement scales), (b) facilitators and barriers to pain management, and (c) caring for persons with dementia.

Implications: Clinical implications from this study suggest the need for a systematic, consistent method of observing pain-related behaviors in persons with dementia. Incorporating an OPS such as the Abbey Pain Scale into the electronic medical record (EMR) and MAR might prompt nurses to recognize behaviors and treat pain and help overcome barriers such as lack of time. Adoption of an institutional philosophy of dementia care might provide the foundation for a holistic theoretical framework or expansion of the NDBM. This framework could include staff education and improved competencies, which, in turn, will positively impact health outcomes for people with dementia.

Abstracts of Podium Presentations

OPPORTUNITIES IN FAMILY HEALTH

OPPORTUNITIES IN FAMILY HEALTH

Nurse-Led Pediatric Scholarship and Projects in Hospitals in the United States

Madalynn Neu, PhD, RN, FAAN, Associate Professor¹, Nurse Scientist²
Bonnie Gance-Cleveland, PhD, RN, PNP-BC, FAAN, Professor¹, Nurse Scientist²
Teri Hernandez, PhD, RN, Associate Professor³, Nurse Scientist²
Anne Gillespie, BSN, CPHON, Clinical Nurse IV, Research and Innovations²
Mary Ann D'Ambrosio, BSN, IBCLC, Lactation Specialist, Neonatal Intensive Care²
Robert Hyslop, BSN, CCRN, Clinical Nurse IV, Pediatric Intensive Care²

¹College of Nursing, University of Colorado, Aurora, CO

²Children's Hospital Colorado, Aurora, CO

³School of Medicine, University of Colorado, Aurora, CO

Aim: The aim was to improve the program of nurse-led research, evidence-based-practice (EBP), and quality improvement (QI), at a university-affiliated children's hospital.

Background: Ratings of children's hospitals typically are based on research conducted by physicians. Nurses however, also conduct research, EBP, and QI projects that enhance the care of children. Hospital administrators in children's hospitals in the United States (US) hire Nurse Scientists to assist bedside nurses conduct research, EBP and/or QI. As an initial step in deciding how to improve our program, Nurse Scientists at our hospital approached 23 nurses from the US Pediatric Nurse-Scientist consortium.

Methods: We developed an interview guide for telephone interviews. Four Nurse Scientists and three bedside nurses conducted the telephone interviews, each lasting 40 to 60 minutes. Questions were designed to obtain information about which hospitals had the best programs of nurse-led research, EBP and QI; degree of administrative encouragement, promotion, and advertisement of these projects; barriers to conducting projects; dissemination of findings; and role of the nurse scientists.

Outcomes: Twenty of the 23 nurse scientists responded to the telephone interviews. Respondents rated hospitals highly for nurse led research, EBP and/or QI if they had: a national reputation; respected nurse researchers; affiliation and collaboration with an academic institution; dedicated specialists for research, EBP, and/or QI; a sustainable program; supportive infrastructure ability to obtain major funding; a good number of publications and presentations; and a culture for conduction of nurse-led projects. Most hospital administrators allowed for one to two full time nurse scientists positions, although some had additional nurse scientists hired by specialty units. Nurse Scientists typically provided individual mentorship and classes for research, EBP, and dissemination. Fellowships for nurses lasting 6 months to 2 years for either research or EPB were offered by nurse scientists at 11 hospitals. Although Nurse Scientists assisted with QI projects, QI usually was a separate department. Nurse-led research was encouraged only at 7 of 20 hospitals. Grant support ranging from \$2,500 to \$75,000 was available for nurse-led projects at many hospitals. A desired outcome for the Nurse Scientist programs was dissemination of projects by presentation and publication. Time for nurses to conduct projects was mentioned by all the nurse scientists as the primary barrier. The most successful incentive for publication seemed to be incorporation of this work into a clinical ladder system. Only eight respondents stated that nurse-led projects were featured on their hospital's website.

Conclusions: Based on the interviews, it seemed that providing a culture of nurse-led research, EBP and QI would best be done by: 1) including conduction and dissemination of projects in the clinical ladder system; 2) providing time away from the unit for nurses to conduct and publish their projects; 3) funding and resources such as nurse scientists to support projects; and 4) advertising presentations and publications of nurses on the hospital website. These findings will be used to change our system and evaluate outcomes. Future investigations will be to involve participants in the consortium, to ascertain the most effective role of nurse scientists.

OPPORTUNITIES IN FAMILY HEALTH

Educating Adolescents on the Adverse Effects of Stimulants in Energy Drinks

*Rexanne Wiefelich, RN-BC
Instructor
College of Nursing
Montana State University
Kalispell, MT*

*Susan Raph, DNP, RN, NEA-BC
Campus Director
Interim Associate Dean
College of Nursing
Montana State University
Great Falls, MT*

Purpose: The purpose of the project was to assess, provide an educational intervention, and evaluate the knowledge of students in one rural high school biology class regarding the adverse effects of stimulants in energy drinks.

Background: The regulation of energy drinks varies throughout the world with the US having one of the least stringent systems. In the US, the FDA does not cap the amount of caffeine in energy drinks and as a result, energy drink companies have no limitations in the caffeine content of their beverages. Adverse health effects from the intake of energy drinks experienced by children, adolescents, and young adults, the primary targeted consumers, are a mounting concern. Adolescents may not be fully aware of the ingredients in energy drinks, their side effects, nor their potential to create adverse events. A continued lack of awareness may lead to poor health outcomes in this vulnerable population.

Method: Institutional Review Board approval, school and parental consent, and informed assent from student participants was obtained. Guided by the Framework for Exploring Adolescent Wellness (Spurr, Bally, Ogenchuk, & Walker, 2012), a pre and post-test design was used to assess the knowledge of the adolescent population before and after an educational intervention. The intervention consisted of Power Point® lecture, YouTube® video, and a Jeopardy® style game with question and answer period.

Outcomes: Forty-six student participants participated in the project which represented 40% of class census. The sample consisted of 57% male and 43% female with an age range of 14-15 years. Fourteen percent reported consuming energy drinks daily and 46 % reported weekly consumption. Analysis of pre-post intervention aggregate data revealed varied knowledge improvements in the sample. Minimal knowledge improvement was noted regarding the harmful mental and physical effects of energy drinks, ingredient comparisons with sports drinks, and results of caffeine over-doses. Moderate improvement was noted regarding comparisons of coffee caffeine content, natural sources of caffeine, school policy regarding stimulants, and caffeine daily allotment recommendations for adolescents. Marked knowledge improvements were noted regarding regulation and labeling requirements of energy drinks. Pre and post mean aggregate scores showed an overall 24% knowledge improvement.

Implications: The project demonstrated that overall, adolescents have limited knowledge about energy drinks, their ingredients, and the potential for adverse side effects. Using accurate health information within the context of adolescent wellness represents a unique opportunity for clinical nurse leaders to contribute to the health literacy of the adolescent population. The project findings provide opportunity for clinical nurse leaders to use the outcomes as the basis for an educational underpinning within the school's curriculum to educate students, parents, and teachers; at healthcare facilities to educate healthcare providers and their clients; and at community health fairs to educate the public.

Reference:

Spurr, S., Bally, J., Ogenchuk, M., & Walker, K. (2012). A framework for exploring adolescent wellness. *Pediatric Nursing, 38*(6), 320-326.

OPPORTUNITIES IN FAMILY HEALTH

The Use of Journal Writing in Families of a Critically Ill Patient: An Integrative Review

*Cara Gallegos, PhD, RN
Hannah Nakashima, BS*

*School of Nursing
Boise State University
Boise, ID
caragallegos@boisestate.edu*

Background/Rationale: Medical advances and technology have significantly improved patient care in the last several decades. The Intensive Care Unit (ICU) is a component of modern healthcare and the demand has continued to grow. From 2006 to 2010, the number of critical care beds in the United States increased 15%, from 67,579 to 77,809. The intensive care unit (ICU) is a busy and frightening place for families. It is well established that family members of a critically ill patient can experience significant stress anxiety, depression, and posttraumatic stress disorder (PTSD).

Purpose/Aims: The purpose of this integrative review provides was to provide an overview of the current evidence on the use of journal writing by a family member as a coping mechanism during a loved one's critical illness in the Neonatal Intensive Care Unit (NICU), PICU, or ICU.

Methods: Five databases (Medline, PsycINFO, CINAHL, PsycARTICLES, and Health Source: Nursing/Academic Edition) were searched using keywords individually and in combination. PRISMA methodology was used to guide this review. Nine eligible studies reported data from 426 relatives of critically ill patients.

Results: The quality of research was assessed using the Standard Quality Assessment Criteria for Evaluating Primary Research Papers from a Variety of Fields. Overall, the quality of evidence was low. The key themes identified include: communication and understanding, connection to the patient, emotional unloading, creating something meaningful, and importance of pictures and staff entries. Overall, providing a journal to families in the ICU is a simple and cost effective tool that appears to improve psychological outcomes of families post intensive care. Reduction in psychological distress was seen across all populations from mothers of neonates to spouses and children of a critically ill patient. All of the studies that included stress and PTSD as a dependent variable demonstrated a statistically significant reduction in post-traumatic stress symptoms after the diary intervention.

Implications: Providing the family with access to a journal is considered the standard of care in many European hospitals. Despite the growing empirical evidence supporting the benefits of an ICU diary for family members of ICU patients, this has yet to become common practice in American hospitals. Journal writing is a simple and cost effective intervention that critical care nurses can offer patients' families. Future research is needed to further examine the benefits of journal writing.

OPPORTUNITIES IN FAMILY HEALTH

Mothers' Concerns Parenting Young Infants and Toddlers with Phenylketonuria

Sandra A. Banta-Wright, PhD, RN, NNP-BC
Assistant Professor
School of Nursing
Oregon Health & Science University
Portland, OR

Kristin Lutz, PhD, RN
Associate Professor
School of Nursing
Oregon Health & Science University
Portland, OR

Martha Driessnack, PhD, RN, PPCNP-BC
Associate Professor
School of Nursing
Oregon Health & Science University
Portland, OR

Background: When newborns are diagnosed with phenylketonuria (PKU), treatment begins immediately to ameliorate the consequences of phenylalanine toxicity on the developing brain. Previous studies have revealed the increased stress and decreased quality of life parents experience raising children with PKU. No study has examined family concerns raising young infants and toddlers with PKU.

Purpose: Describe maternal concerns raising young infants and toddlers with PKU.

Method: Qualitative thematic descriptive approach was used for a secondary analysis of data collected in 2011 and 2012 with mothers in the United States and Canada who breastfed one infant with PKU. The original study consisted of two phases: In phase one, mothers (N = 89) completed an on-line survey of their experiences and responses to feeding their infant with PKU. In phase two, 10 mothers were purposefully selected for in-depth, semi-structured telephone interviews to explore and describe their experiences breastfeeding their infants with PKU. Study participants met the following inclusion criteria: 1) twenty-one years of age, 2) read and write in English, 3) breastfed a child with PKU, and 4) live in the US or Canada. Using a descriptive qualitative design, mothers' verbatim interview transcripts were systematically re-analyzed. Data analysis process began with reviews of the interview transcripts. Coding categories were identified and defined to ensure that codes were applied consistently across the data to identify commonalities and differences in mothers' concerns of raising young infants and toddlers with PKU. Then, an overarching central theme and subthemes were developed.

Results: The central theme - *Am I getting it right?* - described the uncertainty and isolation mothers' felt as they learned PKU management and the consequences of not getting it right for their young children. Two subthemes included: 1) *Ever-present*, which described the ubiquitous nature of a PKU diagnosis, and 2) *No one to turn to*, which described the concerns about isolation within their family and community. The second sub-theme had two sub-components: a) *Trust*, needing to learn to trust others, not only to understand, but also to manage the PKU diet, and b) *Support*, the lack of internal and external resources to manage the disorder. All themes, sub-themes and component are supported with exemplars.

Conclusion and Implications: Mothers voiced concerns about feeling alone and isolated in their families and communities as they managed their children's day-to-day issues with PKU, despite having the advantages of being well educated, having family and friends, and health insurance. While mothers reported receiving support and anticipatory guidance from the pediatric metabolic team, they felt alone. Mothers want 1) support from others experiencing a similar journey of raising infants and young toddlers with PKU, 2) to share their personal experiences, feeling and concerns and 3) to explore coping strategies and firsthand information about new treatments and products. However, the rarity of PKU makes connecting a challenge. Pediatric metabolic clinics need to ask mothers about the isolation and assist mothers to seek out quality resources (Face-to-face, Internet, etc.) to connect with other mothers, thereby reducing the isolation.

Funding: Faculty Developmental Research Grant, George Fox University, Newberg, Oregon.

OPPORTUNITIES IN FAMILY HEALTH

The Effect of the SPARK Program on Middle School Physical Activity and Related Outcomes

*Deborah Koniak-Griffin, EdD, RNC, FAAN
Professor and Associate Dean for Diversity, Equity, and Inclusion
UCLA School of Nursing, Los Angeles, CA*

*Monique Gill, MPH, Doctoral Candidate, Community Health Sciences Department
Sarah E. Roth, MA, Doctoral Student, Community Health Sciences Department
Alec M. Chan-Golston, MS, Doctoral Student, Biostatistics Department
Lindsay N. Rice, MSW, Project Manager, Community Health Sciences Department
Michael L. Prelip, MPH, DPA, Professor and Chair, Community Health Sciences Dept.
UCLA Fielding School of Public Health, Los Angeles, CA*

Purpose: Despite the health advantages of regular physical activity (PA), few adolescents meet recommendations. Further, demographic disparities exist such that Latinx, female, and low-income youth are less active than their White, male, and more affluent peers, respectively. This purpose of this study was to examine the effects of the middle school SPARK physical education (PE) curriculum on PA and related outcomes in a predominantly low-income, Latinx student population in Los Angeles, California.

Background: Many PE classes do not achieve recommended levels of moderate-to-vigorous PA (MVPA), and core academic subjects and school activities are often prioritized over PE for resources and space. As a result, the public health, nursing, and medical communities have identified PE as an important site of intervention to increase MVPA. The SPARK program focuses on building capacity among PE teachers to maximize PA during PE and improve students' fitness and enjoyment. Though SPARK has been widely disseminated, this study represents the first evaluation of the structured middle school curriculum.

Methods: Sixteen schools were randomly assigned to the intervention or control condition, and PE teachers at eight schools received the intervention. PE lessons at all schools (N=561) were observed over two years using the modified System for Observing Fitness Instruction Time (SOFIT), a validated instrument for measuring PA and lesson context simultaneously. Questionnaire data were collected from 4,256 seventh- and eighth-grade students at baseline and follow-up. Items assessed engagement in 60 minutes or more of daily PA and performing muscle-strengthening exercises, PE enjoyment, PA attitudes, and fitness levels. Data on student fitness levels were collected during the same time periods using FitnessGram, a widely used fitness assessment that examines aerobic capacity, strength and endurance, flexibility, abdominal strength, trunk strength, and body composition. Hierarchical linear regression models examined the effect of the intervention on the amount and consistency of MVPA and sedentary behavior. Hierarchical logistic regression models assessed intervention effects on PA attitudes, PE enjoyment, fitness levels, and PA, controlling for demographic variables.

Results: An average of 13.7% of observed PE class time was spent in MVPA (approximately 5 minutes of a 60-minute class), compared to 27.5% of time spent sedentary. Although a significant positive intervention effect was found for both FitnessGram performance and boys' PE enjoyment, there was no evidence that the curriculum resulted in increased MVPA or consistent MVPA, or that it decreased sedentary behavior during PE. Surprisingly, a negative intervention effect was detected for muscle strengthening exercises.

Conclusion: Mixed evaluation findings of the middle school SPARK curriculum's effects on PA during and outside of PE class demonstrate that an out-of-the-box curriculum does not have the same results in all contexts. Findings suggest that contextual factors may contribute to PA levels in PE. Further research is needed to identify effective strategies to increase PA among adolescents. Engagement of school nurses, teachers, and administrators in school-wide wellness programs that emphasize the importance and value of PA may enhance the effects of PE curricula. Such collaborative efforts need to be well coordinated, comprehensive and planned to facilitate parental involvement.

OPPORTUNITIES IN FAMILY HEALTH

Partnerships in Preparedness: Families with Children with Special Health Care Needs

Teresa Dodd-Butera, PhD, RN/DABAT

*Professor, Departments of Public Health and Doctoral Programs, Azusa Pacific University
Professor Emeritus, Nursing, CSU San Bernardino*

Margaret Beaman, PhD, RN, Coordinator, Graduate Nursing Program, CSU San Bernardino

Melody Amaral, MSW, MA, CEO, Director of Mental Health, Carolyn E. Wylie Center

Christopher Grable, BSN, RN, Graduate Nursing Student, CSU San Bernardino

Molly Broderick Prity (Retired), Certified Specialist, California Poison Control System

Purpose: Emergency preparedness is a significant public health need, especially for the estimated 57 million Americans with disabilities. Healthy People 2020 cites both “Preparedness” and “Disability and Health” as priorities in fostering community resilience and engagement, respectively. Barriers and contributing factors to preparedness have been noted in the literature. Koeffler et al. (2018) found that greater than 60% of disaster preparedness resources did not address children with disabilities. In empowering communities, Marceron & Rohrbeck’s (2018) findings indicated that both self-efficacy and perceived threats contribute to motivation for preparedness in individuals with physical disabilities. Congruent knowledge about household readiness and internalization of preparedness levels is necessary or the family will be at increased risk for a gap in health provisions and more susceptible to adverse health outcomes in disaster (Bagwell et al, 2016) Thus, the purpose of this study was two-fold: to assess levels of preparedness and concern for regional threats; and to establish academic-community partnerships for families with children with special health care needs (CSHCN), in order to address community readiness.

Conceptual Framework: The project extended the conceptual framework of Pender’s Health Promotion Model. The framework incorporates predictors of preparedness behaviors and addresses the potential for exposures during disasters, and proposes individual and family readiness as an approach to community empowerment and efficacy.

Methods: This was a mixed methods educational study, with a pre/posttest and follow-up design to assess changes in knowledge, attitudes, and behaviors in an agency serving families with CSHCN, in a medically underserved community (MUC)*. In Phase I, educational resources were presented, to include information on earthquakes, wildfires, and poisonings - all significant to the families and the region. The programs were offered at collaborative venues serving populations with medical vulnerabilities. In Phase II, results were presented on the findings, and the community created a model together with the academic partners, in order to address gaps in readiness.

Results: The families’ levels of concern were incongruent with their level of preparedness. Initially, 83% of participants expressed concern for wildfires and 71% with earthquakes. However, 66% reported no disaster communication plan; and 57% did not have an emergency supply kit for family members in their homes or cars. Regarding poisonings, 77% of participants were concerned, yet 74% didn’t have the poison control center (PCC) telephone number. After the educational program, 70% of the participants reported formulating a communication plan; 78% reported gathering material for an emergency supply kit; and 74% had phone access to the PCC.

Implications: Interventions using health promotion and education through an academic nursing program and community partnership increased awareness and readiness, and addressed an information gap in emergency preparedness for families with CSHCN. *The intervention team established a collaborative and congruent model for emergency preparedness with the community and family that is innovative, by calling on the strengths of nursing faculty, students, families with CSHCN, and community resources.* This study lays the foundation for the future expansion of the “Tell One” model developed - to be extended to other communities with families with CSHCN.

Funding: This study was generously supported by an internal grant from the CSU San Bernardino Office of Community Engagement: Community-Based Participatory Research (CBPR) Mini-Grant Award.

Abstracts of Podium Presentations

SLEEP ISSUES IN CHRONIC CONDITIONS

SLEEP ISSUES IN CHRONIC CONDITIONS

A Dyadic Sleep Intervention for Alzheimer's Disease Patients and Their Caregivers

Yeonsu Song, PhD, RN, FNP, Assistant Professor, School of Nursing, University of California, Los Angeles, Los Angeles, CA; Anna Papazyan, BA, Geriatric Research, Education and Clinical Center, VA Greater Los Angeles Healthcare System, North Hills, CA; Diane Lee, MSW, Geriatric Research, Education and Clinical Center, VA Greater Los Angeles Healthcare System, North Hills, CA; Karen R. Josephson, MPH, Geriatric Research, Education and Clinical Center, VA Greater Los Angeles Healthcare System, North Hills, CA; Susan M. McCurry, PhD, School of Nursing, University of Washington, Seattle, WA; Michael R. Irwin, MD, Cousins Center for Psychoneuroimmunology, Semel Institute for Neuroscience and Human Behavior, University of California, Los Angeles, Los Angeles, CA; Edmond Teng, MD, PhD, School of Medicine, Stanford University, Palo Alto, CA; Cathy A. Alessi, MD, Geriatric Research, Education and Clinical Center, VA Greater Los Angeles Healthcare System, North Hills, CA; Jennifer L. Martin, PhD, Geriatric Research, Education and Clinical Center, VA Greater Los Angeles Healthcare System, North Hills, CA

Aims: To pilot and iteratively refine a behavioral sleep intervention program targeting both Alzheimer's disease (AD) patients and their family caregivers for subsequent assessment in a randomized controlled trial.

Background: Nighttime sleep disturbances in AD patients often remain unmanaged, which challenges caregivers by affecting their sleep, increasing the burden of caregiving, and ultimately accelerating the transition to institutional care. Although behavioral sleep interventions have been shown to be effective in other populations, few have been implemented for AD patients or their caregivers, and none have addressed both members of the dyad. Interventions that simultaneously address sleep difficulties in the dyad may be highly beneficial, given the synergistic benefits of dyadic intervention programs seen in other patient populations.

Methods: The intervention involved five weekly sessions, administered by non-sleep specialists. It implemented key components (e.g., sleep hygiene, stimulus control, sleep compression) of evidence-based cognitive behavioral therapy for insomnia treatment programs. Other components included daily walking, light exposure, and dementia-related problem-solving strategies which have been found to be efficacious for improving sleep in AD patients. The intervention materials and structure were refined based on the acceptability of the intervention components to caregivers and the usability of the program materials for the interventionist. This process was conducted iteratively (i.e., each participant in sequence) until further revision was no longer needed. Intervention outcomes were measured using sleep diaries for at least 7 days/nights. They included the total number of days per week that each dyad member spent >30 minutes to fall asleep, >30 minutes awake at night, and average daytime nap time. The duration of daily walking and light exposure were also collected.

Results: Four out of five enrolled dyads completed the sessions. All patients were diagnosed either probable or possible AD and reported at least one sleep problem at least 3 times/week. Caregivers had a baseline range of 6-19 on the Pittsburgh Sleep Quality Index, indicating poor sleep quality. After the intervention, three caregivers and two patients had no nights that it took >30 minutes to fall asleep, compared to 1-4 nights/week at baseline (i.e., week 1 of the intervention). At baseline, dyads were awake >30 minutes at 1-6 nights/week; after all sessions, they had fewer nights they were awake >30 minutes, representing a 33-100% reduction across dyads. For nap time, three patients reduced their daily nap time (65, 72, and 120 minutes at baseline versus 60, 29, and 29 minutes, respectively at the end of five sessions). The goals of 30 minutes of daily walking and light exposure were achieved in two dyads. Iterative refinements to the intervention included reducing session duration, restructuring intervention components, and modifying the daily diary. After the fourth dyad, no additional issues were identified by caregivers or the interventionist.

Implications: A dyadic sleep intervention program for AD patients and their caregivers delivered by non-sleep specialist was feasible. A nurse can play a key role in delivery of such programs in various types of community settings.

Funding: The National Institute on Aging (K23AG055668, PI: Song) and the National Heart Lung and Blood Institute (K24HL143055, PI: Martin) of the National Institutes of Health.

SLEEP ISSUES IN CHRONIC CONDITIONS

Mortality and the Sequence of Diagnosis of Obstructive Sleep Apnea and Hypertension

*Jolene Tan Smeltzer, MSN, RN, CNL
UCLA/CDU Bridges Scholar
Jonas Nurse Leader Scholar
School of Nursing
University of California, Los Angeles
Los Angeles, CA*

*Magda Shaheen, PhD, MPH, MS, FACE
Associate Professor
Charles R. Drew University of Medicine
and Science
Mervyn M. Dymally School of Nursing
Los Angeles, CA*

*Eunjoon An, MSN, RN
PhD Student
School of Nursing
University of California, Los Angeles
Los Angeles, CA*

*Paul M. Macey, PhD
Associate Professor in Residence
School of Nursing
University of California, Los Angeles
Los Angeles, CA*

Purpose: To examine the relationship between mortality among adults living in California and receiving health services from the UC Health system who have been diagnosed with obstructive sleep apnea (OSA) and hypertension (HTN).

Background: OSA affects nearly 20 million adults in the United States. OSA is associated with poor health outcomes such as depression, cardiovascular diseases, and early death. National reports showed evidence supporting a model that obstructive sleep apnea is a primary cause of HTN. OSA is accompanied by autonomic and psychological symptoms linked to regional brain injury, so such injury may be a mechanism contributing to HTN. Therefore, clinically, OSA should precede HTN, assuming similar screening. A common model for clinical treatment is that identifying and treating OSA first would prevent HTN from developing or perhaps reversing HTN.

Methods: Analysis of secondary data from UCReX, University of California Research eXchange database that includes 1.6 million records from patients in the UCLA Health System. Our sample included 16,974 adult patients with OSA and HTN diagnosis over a 10-year period (2006-2016). SPSS v.25 was used to describe population characteristics and mortality. Chi-square analysis was used to determine the difference in mortality by population characteristics and the sequence of diagnosis. Multiple logistic regression was used to determine the relationship between mortality and diagnoses adjusted for population characteristics.

Results: Most patients were diagnosed with both OSA and HTN at the same time (48.3%; usually related to intake) versus HTN first (43%), and OSA first (8.7%); 64% were male, 58.7% -White, 11.4% - Hispanic, and 9.9% -Black. The average age of population was 64.5 years. Age varied significantly by diagnoses where those with HTN first was 66.0 years, OSA first was 61.7 years, and both at the same time was 63.75 years ($p<0.05$).

The overall mortality was 7.9%, and varied significantly by diagnosis groups (9.6% for HTN and OSA diagnosed at same time, 5.2% for OSA first, 6.9% for HTN first ($p<0.05$)). Multiple logistic regression analysis showed that OSA first and HTN first had lower risk of mortality relative to those diagnosed with both at the same time ([HTN first (Adjusted Odds Ratio [AOR]=0.56); OSA first (AOR=0.51)] ($p<0.05$)). No difference in the adjusted mortality between those with HTN first relative to those with OSA first ($p>0.05$). Other predictors of mortality were age (AOR)=1.06), female relative to male (AOR=0.75), Blacks (AOR=1.29), and Hispanics (AOR=1.30) relative to White ($p<0.05$).

Implications: In our sample, mortality was highest among patients diagnosed with both HTN and OSA at the same time followed by those with HTN first then those with OSA first. The adjusted mortality remained high among those diagnosed with HTN and OSA at the same time relative to the other two groups. No difference in the adjusted mortality between those diagnosed the HTN first relative to those with OSA first.

Further studies are needed to investigate the clinical significance of being diagnosed both at the same time versus diagnosed with OSA first and the effectiveness of CPAP treatment in preventing/lowering hypertension related to cardiovascular disease progression.

Funding: National Institute on Minority Health and Health Disparities S21 MD000103. UCReX support from NIH National Center for Advancing Translational Science (NCATS) UCLA CTSI UL1TR001881.

SLEEP ISSUES IN CHRONIC CONDITIONS

Insomnia and Fatigue Symptoms in Adults with HIV: Which Comes First?

Kathryn A. Lee, PhD, RN, CBSM

Professor Emerita

University of California, San Francisco

School of Nursing

San Francisco, CA

Caryl Gay, PhD

Research Associate

University of California, San Francisco

Dept. of Nursing, Institute of Health

and Society, Faculty of Medicine

Anners Lerdal, PhD, RN

Professor

University of Oslo

Oslo, Norway

Purpose: The purpose of this longitudinal study was to describe insomnia symptoms (difficulty falling asleep, difficulty staying asleep, and daytime sleepiness) and their relationship to fatigue as well as lack of energy (LOE) over time in adults living with HIV infection.

Background: HIV-infected adults are at high risk for fatigue and insomnia. However, it is not clear if one typically precedes the other, or whether fatigue and LOE are associated with any particular type of insomnia.

Methods: In this descriptive longitudinal study of symptoms in adults with HIV, 350 participants completed the Memorial Symptom Assessment Scale (MSAS) and other measures of fatigue and sleep at study enrollment (Phase 1). If participants indicated that an MSAS symptom (difficulty sleeping or LOE) occurred in the past week, they were asked to rate the symptom's frequency, severity, and distress. If no MSAS insomnia or LOE symptom was present at Phase 1, participants continued into Phase 2 and completed the MSAS monthly by telephone until they were symptomatic for 3 consecutive months. Chi-square (χ^2) and unpaired *t*-tests were used to compare groups; $p \leq .05$ was considered statistically significant.

Results: In Phase 1, 42% of the participants had difficulty falling asleep (initiation insomnia), 49% had difficulty staying asleep (maintenance insomnia), 34% had difficulty staying awake during the day (daytime somnolence), and 65% had LOE. Compared to participants without any form of insomnia, participants with initiation insomnia differed significantly on all measures of fatigue and on all three LOE dimensions in the MSAS. Compared to participants without any form of insomnia, participants with maintenance insomnia or daytime somnolence also differed on all measures of fatigue and differed on frequency and severity of LOE, but not on the distress dimension of LOE.

Phase 2 consisted of 164 (47%) participants who indicated no LOE and no difficulty sleeping in Phase 1. Participants excluded from Phase 2 due to insomnia or LOE did not differ from Phase 2 participants on age, sex, race, sleep duration, or markers of HIV disease severity such as CD4 cell count, detectable viral load, anti-retroviral medication, or years since diagnosis. Phase 2 participants were more likely to be employed, take fewer medications, and have fewer comorbidities.

Only 75 (21%) participants remained asymptomatic the entire 24 months. For the 49 who became symptomatic, there was no pattern to their symptom onset: 40% had LOE prior to the month when insomnia first presented, 20% had both symptoms first present during the same month, and 40% had insomnia during the month before LOE first presented.

Implications for Practice and Research: The type of insomnia experienced by participants in this study did not differentiate their experience of daytime fatigue or LOE. With monthly measurement intervals, there was no pattern for when insomnia or LOE first appeared. Patterns for these two symptoms may be more discernible when examined at daily or weekly intervals rather than over longer intervals. Because these were self-report measures, objective sleep measures may more clearly distinguish associations with fatigue or LOE over time.

Funding: This research was supported by a grant from the National Institutes of Health/National Institute of Mental Health (NIMH, 5R01MH074358).

SLEEP ISSUES IN CHRONIC CONDITIONS

Physical Activity on Long-Term Fatigue and Sleep in Older Adult Breast Cancer Survivors

Alexi Vasbinder, BSN, RN, Doctoral Student, Biobehavioral Nursing and Health, Informatics, University of Washington School of Nursing, Seattle, WA; Kerry Reding, PhD, MPH, RN, Assistant Professor, Biobehavioral Nursing and Health Informatics, University of Washington School of Nursing, Seattle, WA; Di Wang, MPH, RN, Doctoral Student, Biobehavioral Nursing and Health Informatics, University of Washington School of Nursing, Seattle, WA; Claire Han, PhD, MSN, RN, Post-Doctoral Student, Doctoral Student, Biobehavioral Nursing and Health Informatics, University of Washington School of Nursing, Seattle, WA; Oleg Zaslavsky, PhD, Assistant Professor, Doctoral Student, Biobehavioral Nursing and Health Informatics, University of Washington School of Nursing, Seattle, WA; Wendy Barrington, PhD, MPH, Assistant Professor, Psychosocial and Community Health, University of Washington School of Nursing, Seattle, WA; Dale Langford, PhD, Research Assistant Professor, Anesthesiology and Pain Medicine, University of Washington School of Medicine, Seattle, WA; Elizabeth M. Cespedes Feliciano, ScD, Research Scientist, Division of Research, Kaiser Permanente Northern California, Oakland, CA; Electra Paskett, PhD, Professor, Division of Cancer Prevention and Control, The Ohio State University College of Medicine, Columbus, OH

Aims: The aim of this study is to examine if post-diagnostic physical activity is associated with long-term fatigue and sleep disturbance in older adult breast cancer survivors.

Background: Long-term fatigue and sleep disturbance are common side effects of cancer treatment and are associated with numerous detrimental outcomes. Physical activity has been shown to improve fatigue and sleep disturbance in various populations, including cancer survivors; however, older adults are often excluded in studies.

Methods: We conducted a prospective, secondary analysis of 432 older adult breast cancer survivors (age >65) in the Women's Health Initiative Life and Longevity After Cancer cohort. Women were eligible if they were diagnosed with cancer any time prior to the collection of self-reported physical activity. Post-diagnostic physical activity was ascertained using the WHI Physical Activity Questionnaire and measured as total metabolic equivalent (MET)-minutes/week of walking, mild, moderate, and vigorous activity. MET-min/wk were classified into three categories as below recommendation (<500 MET-min/wk), meeting recommendation (500–1000 MET-min/wk), or exceeding recommendation (>1000 MET-min/wk). Fatigue and sleep disturbance were obtained by self-report in a questionnaire given, on average, 5 – 10 years after physical activity ascertainment. Fatigue was measured using the Rand Short-Form 36 Vitality Subscale and dichotomized as fatigued (<50) or non-fatigued (≥50). Sleep disturbance was measured using the Insomnia Rating Scale with those scoring ≥9 identified as having insomnia. We employed logistic regression to estimate the risk of fatigue and sleep disturbance in relation to physical activity. All analyses are adjusted for physical function, pain, cancer stage at diagnosis, comorbidities, depression, income, ethnicity, and education.

Results: Women who exceeded the recommended physical activity were at reduced risk of fatigue compared to those who did not meet the recommended physical activity after adjustment (OR=0.28 [95% CI:0.13,0.59]). Women who met recommendations for physical activity were at slightly reduced risk of fatigue after adjustment (OR=0.61 [95% CI:0.33,1.16]). Using the trend test, the data provide strong evidence that the risk of long-term fatigue was lower with increasing physical activity after adjustment (P<0.001). While there was no statistically significant reduction in risk of sleep disturbance among women who either met, or exceeded, the recommended physical activity, the association is in the expected direction (P=0.091). The average time between cancer diagnosis and physical activity measurement was 1291 days; the average time between physical activity measurement and outcomes was 2945 days.

Implications for Translation for Practice: These data provide support for nurses to recommend physical activity for older adult breast cancer survivors to relieve symptoms of fatigue, with greater amounts of physical activity being more beneficial. Randomized trials should include older adult cancer survivors in physical activity interventions to determine the best intensity and duration of activity to relieve symptoms.

Funding: Education and research supported by the American Achievement for College Scientists Seattle Chapter and the National Institutes of Nursing Research T32 Omics and Symptoms Science Training Program at the University of Washington (T32016913). The WHI LILAC study is funded by UM1 CA173642. Dr. Cespedes Feliciano was supported by K01-CA226155.

**SOCIAL AND EMOTIONAL HEALTH
PERSPECTIVES IN ADOLESCENTS AND
EMERGING ADULTS**

SOCIAL AND EMOTIONAL HEALTH PERSPECTIVES IN ADOLESCENTS AND EMERGING ADULTS

Body Appreciation and Dissatisfaction among Maltreated and Comparison Adolescents

Janet U. Schneiderman, RN, PhD
Associate Professor of Research
Interim Chair
Department of Nursing

Andrea Kennedy, MSW, PhD
Post-Doctoral Fellow
Department of Children, Youth,
and Families

Suzanne Dworak-Peck School of Social Work
University of Southern California
Los Angeles, CA

Purposes/Aims: This study aims to explore whether maltreatment status and BMI percentile are related to body appreciation and body dissatisfaction in a sample of child welfare-affiliated maltreated youth (youth with an open case in the child welfare department) and in a comparison population from the same community.

Rationale/Conceptual Basis/Background: During adolescence a confluence of physical, social, and cognitive changes occur and body image in particular may emerge as a source of problems. Although body image is often studied with a focus on body dissatisfaction or negative body image, body appreciation is a separate and important construct to investigate. There is some evidence that maltreatment leads to higher BMI percentile in adolescents. Since it well documented that overweight and obesity contributes to body dissatisfaction, we examined whether maltreatment may also have an association with body image.

Methods: Data came from an ongoing longitudinal study examining the impact of child maltreatment on adolescent development. Data from Time 1 was used when the youth were between 9 and 13 years old (299 maltreated and 148 comparison youth; 54% male). The dependent variables were body appreciation and body dissatisfaction assessed by the Self-Image Questionnaire for Young Adolescents. The primary independent variables were measured height and weight converted into BMI percentile and maltreatment status. Covariates included age, being Latino (39% compared to White 11%, Black 38%, or Biracial/multiethnic 12%), and pubertal status. We stratified by sex and used linear regression to evaluate if BMI percentile and maltreatment were related to body appreciation and body dissatisfaction, while controlling for covariates.

Results: BMI was not associated with body appreciation for either boys or girls. Boys who were maltreated reported decreased body appreciation ($\beta = -0.15$, $p = .02$) compared to the comparison boys. For girls, maltreatment did not predict body appreciation. Neither maltreatment nor BMI were associated with body dissatisfaction for either boys or girls. The only variable in the models that was significant for both boys and girls was depressive symptoms; as depressive symptoms increased, body appreciation decreased and body dissatisfaction increased.

Implications for Translation to Practice/Further Research: The finding that maltreatment was associated with decreased body appreciation only in boys was a somewhat surprising finding, as adolescent girls as a group are more likely to exhibit greater body dissatisfaction than adolescent boys. Although mothers tend to address and promote body image in their daughters as part of their role as a parent, this behavior may not be stressed as much for their male children. Nurses need to acknowledge effect of maltreatment on body image in young adolescent males and support the acceptance of their bodies because body image dissatisfaction is a strong risk factor for development of eating disorders. The association of depression to poor body image makes it important to explore body image problems when adolescents suffer with depressive symptoms, and vice versa, when adolescents have body image problems, it may be important to assess depressive symptoms.

Funding: The National Institutes of Health RO1-HD39129 (PI: Trickett).

SOCIAL AND EMOTIONAL HEALTH PERSPECTIVES IN ADOLESCENTS AND EMERGING ADULTS

Factors Influencing Social Support in Emerging Adults with Inflammatory Bowel Disease

*Kendra J. Kamp, PhD, RN, Post-Doctoral Fellow, Biobehavioral Nursing and Health Informatics¹
kamp@uw.edu*

Margaret Heitkemper, PhD, RN, FAAN, Biobehavioral Nursing and Health Informatics¹

Amanda Holmstrom, PhD, Department of Communication²

Zhehui Luo, PhD, Epidemiology and Biostatistics²

Gwen Wyatt, PhD, RN, FAAN, College of Nursing²

Barbara Given, PhD, RN, FAAN, College of Nursing²

¹University of Washington, Seattle, WA

²Michigan State University, East Lansing, MI

Purposes/Aims: To examine specific contextual factors (individual, condition-specific, and emerging adulthood factors) of self-management that influence received social support (total, informational, emotional, and tangible) among emerging adults with inflammatory bowel disease (IBD).

Rationale/Conceptual Basis/Background: Received social support is conceptualized as aid a person reports receiving from others and may come in different forms (informational, emotional, and tangible social support). Yet, little is known regarding the factors that influence received social support, particularly among emerging adults (ages 18-29) with a chronic condition such as IBD. Determining the factors that influence received social support can inform interventions that may result in better health outcomes.

Methods: A convenience sample of 61 emerging adults with a diagnosis of ulcerative colitis or Crohn's disease were recruited from ResearchMatch, Facebook, and word of mouth. Inclusion criteria were being between the ages of 18 – 29, self-reporting of a healthcare provider diagnosis of ulcerative colitis or Crohn's disease, currently prescribed medications to manage their IBD, living in the United States, understood written English, and had access to and ability to use the internet. Potential participants were excluded if they were hospitalized within the past month or currently pregnant. Data were collected from January 2018-February 2018. Participants completed a survey to collect individual, condition-specific, and emerging adulthood factors. Emerging adulthood factors were measured with the Inventory of Dimensions of Emerging Adulthood. Received social support was measured with the Inventory of Socially Supportive Behaviors and included subscales of informational, emotional, and tangible social support. Linear regression models were built using a modified purposeful model selection procedure.

Results: The majority of participants were female ($n = 55, 90\%$) and single ($n = 47, 77\%$). Sixty-four percent ($n=39$) of participants had a diagnosis of Crohn's disease. Of the types of social support, participants reported receiving the highest amount of emotional social support ($M = 3.2, SD = 1.0$) and the lowest amount of tangible social support ($M = 1.8, SD = 0.6$). An association was found between high total received social support and several individual contextual factors of self-management: being younger in age ($p = 0.001$), married ($p = 0.039$), and employed (compared to $p = 0.007$). High tangible received social support was associated with two condition-specific self-management contextual factors: use of immunomodulator medications ($p < 0.001$) and biological medications ($p = 0.001$), when controlling for time since diagnosis and symptom interference. Emerging adulthood factors of self-management were not associated with total or any types of received social support.

Implications for Translation to Practice/Further Research: Significant associations with factors varied based on the type of social support; future intervention work could examine differences between types of social support and health outcomes. These findings contribute a new direction for intervention development with a focus on individual and condition-specific factors of self-management to enhance received social support and ultimately health outcomes for individuals with IBD.

Funding: This study was funded by Sigma Theta Tau International. This work was supported, in part, by the National Institutes of Health, National Institute of Nursing Research Aging and Informatics Training Program at the University of Washington (Grant Nr. T32NR014833) and the Jonas Center for Nursing Excellence.

SOCIAL AND EMOTIONAL HEALTH PERSPECTIVES IN ADOLESCENTS AND EMERGING ADULTS

Self-Efficacy in Limiting Screen Viewing and Loneliness in Parent-Adolescent Dyads

*Rumei Yang, MS, Doctoral Student, College of Nursing
Eunjin Lee Tracy, PhD, Postdoctoral Fellow, Department of Psychology
Lauri Linder, PhD, APRN, CPON, Associate Professor, College of Nursing*

*University of Utah
Salt Lake City, UT*

Purpose: To examine the influence of parents' self-efficacy in limiting screen viewing (SV) on their adolescents' feelings of loneliness and to explore the influence of adolescents' self-efficacy in limiting SV on parents' feelings of loneliness.

Background: SV is one type of sedentary behaviors incorporating watching television, using computers, and playing video games. It is even more detrimental than other types of sedentary behaviors to the health of adolescents, and possibly adults. Consequences of excessive SV (more than 2 hours/day) include poor sleep, poor interpersonal relationship, and depression. Self-efficacy in limiting SV is an important modifiable factor that protects against depression including feelings of loneliness. Although the evidence is compelling, previous studies seldom consider both parents and adolescents together. Due to the interdependent nature of parent-adolescent relationships, exploring the mutual influences on one another from a dyadic perspective as they share the same SV family environment is important.

Methods: A total of 1,573 parent-adolescent dyads from the Family Life, Activity, Sun, Health, and Eating (FLASHE) Study, a publicly available national dataset, were included in these analyses. Loneliness was measured using two self-reported questions modified from the UCLA Loneliness Scale. Self-efficacy in limiting SV was operationalized as one's confidence in limiting one's own screen time and was measured using a single question modified from the Self-Determination Theory Perceived Competence Scale. The actor-partner interdependence model was used to examine the effect of each dyadic partner's self-efficacy in limiting SV on their own and their dyadic partner's loneliness within dyads. Within the study context, actor effect represented whether each dyadic member's self-efficacy influences their own loneliness whereas the partner effect reflected whether one dyadic member's self-efficacy influences their dyadic partner's loneliness. Actor and partner effects were estimated simultaneously in the model. Parents and adolescents completed each of the measures. Data were analyzed using IBM SPSS Mixed (version 25).

Results: Age of participating dyads was categorized into groups (parents' range 18-60+ years, adolescent's range 12-17 years) with about 85.8% of parents aged between 35 and 59 years. Most parents were female ($n=1,179$, 75%), married ($n=1,132$, 72.0%), and white ($n=1,097$, 69.7%) with an equal gender distribution for adolescents. Parents and adolescents' self-efficacy in limiting SV were positively associated ($r=.20$, $p<.01$) as well as their reports of loneliness ($r=.38$, $p<.01$). Parents' self-efficacy in limiting SV was adversely associated with their own feelings of loneliness (parent actor effect: $\beta=-.25$, $SE=.05$, $p<.01$), but not with their adolescent's perceptions of loneliness (parent partner effect: $\beta=-.06$, $SE=.05$, $p=.189$). Adolescents' self-efficacy in limiting SV was associated with less loneliness of their own (adolescent actor effect: $\beta=-.35$, $SE=.04$, $p<.01$) and that of their parents (adolescent partner effect: $\beta=-.15$, $SE=.04$, $p=.001$).

Implications: Our results confirm previous findings where self-efficacy in limiting SV is an important protector of loneliness for both adults and adolescents. Our results advance previous knowledge by supporting SV behavior as a dyadic phenomenon. Specifically, adolescents' own self-efficacy in limiting SV has a significant impact on their parents' loneliness. Parents' self-efficacy in limiting SV, however, did not influence their adolescents' loneliness.

SOCIAL AND EMOTIONAL HEALTH PERSPECTIVES IN ADOLESCENTS AND EMERGING ADULTS

CBCT® to Improve Depressive Symptoms and Cognition in College Students

Melissa D. Pinto, PhD, RN, FSAHM, FAAN
Associate Professor
Sue and Bill Gross School of Nursing
University of California, Irvine, Irvine, CA

Ralph J. DiClemente, PhD
Professor and Department Chair
College of Global Public Health
New York University, New York, NY

Melinda K. Higgins, PhD
Associate Research Professor
Nell Hodgson Woodruff School of Nursing
Emory University, Atlanta, GA

Amy M. Greenblatt, BSN, MPH, RN
PhD Student
Nell Hodgson Woodruff School of Nursing
Emory University, Atlanta, GA

Lobsang Tenzin Negi, PhD
Professor
Department of Religion
Emory University, Atlanta, GA

Aims: The primary aim of this study was to assess preliminary efficacy of a mindfulness-based compassion meditation intervention, Cognitively Based Compassion Training (CBCT®), in improving depressive symptoms and cognition (attention and executive function). The secondary aim was to explore potential behavioral mechanisms of CBCT® operationalized as improvements in the mental health self-management skills of mindfulness and emotional regulation.

Rationale/Background: Depression is common among college students and a leading risk factor for suicide. Most students do not seek professional help when depressive symptoms begin. Students report stigma and low acceptability of traditional treatments as barriers. CBCT® is a community-based intervention designed to improve depressive symptoms and cognition. CBCT first builds skills of mindfulness and attention and then teaches cognitive-behavioral strategies for emotional regulation.

Methods: This study employed a two-group pretest-posttest design. A convenience sample of college students (n=33) received either CBCT (n=24) or usual care (wait-list control) (n=9). Depressive symptoms, stress, cognition (attention and executive function), and mental health self-management skills (mindfulness and emotional regulation) were assessed at baseline and 10 weeks post. Pairwise t-test by group was used to test for any significant change, and effect sizes were calculated (Cohen's d).

Results: At 10 weeks post, there was a decrease in depressive symptoms in the CBCT group among highly stressed students (p=.011; d=.83). Additionally, the CBCT group showed improvements in cognition (sustained attention and executive function) (p=.008;d=.69), emotional regulation (p=.002;d=.82), and mindfulness (awareness p=.011;d=.65 and acceptance p=.004;d=.75). Effect sizes for all outcomes were moderate to very large. Of these, the largest was for impulse control (Cohen's d=1.03), a subscale of emotional regulation. There were no significant improvements in the wait-list control.

Implications and Future Research: Findings demonstrate early evidence for the promise of CBCT to improve depressive symptom and cognition. Future work is needed to confirm efficacy and further explore the behavioral mechanism and the role of mental health self-management skills: mindfulness and emotional regulation.

Abstracts of Podium Presentations

**SOCIAL DETERMINANTS OF HEALTH
AND NURSING EDUCATION**

SOCIAL DETERMINANTS OF HEALTH AND NURSING EDUCATION

Joining Forces: A Holistic Approach to Serving Veterans in Nursing Education

Jené M. Hurlbut, RN, MSN, PhD, Professor, jhurlbut@roseman.edu
Imelda Revuelto, MEd, VBSN Grant Manager and Director of Student Affairs,
irevuelto@roseman.edu

College of Nursing, Roseman University of Health Sciences, Henderson, NV

Background: A Veteran to Bachelor of Science in Nursing (VBSN) pathway was implemented in order to facilitate veterans in the advancement of their careers by obtaining a BSN. This pathway is unique in that only 31 nursing programs were awarded a United States Health Resources and Service Administration (HRSA) grant to create and sustain veteran enrollment and success in nursing programs. This was a four-year grant with a total award of \$1.4 million.

Purpose: The purpose of the VBSN pathway was to: 1) increase the number of veterans enrolled in the Baccalaureate nursing program to increase diversity and facilitate career development for veterans, 2) assess veteran competencies in awarding nursing credits, 3) enhance faculty's ability to provide a culture of respect that addresses the physical, emotional, and environmental issues that may affect veterans in order to minimize barriers through their transition into their nursing program of study, and 4) increase the amount of VBSN graduates that will provide care for medically underserved populations including rural locations.

Best Practices: The VBSN Grant team developed and implemented the pathway to align with the university's educational model of mastery learning. Additionally, a holistic approach to serving veteran students from the point of inquiry through to career was implemented to ensure their success throughout the program. This included developing policies and processes related to admissions, the creation of mechanisms to award credit, the integration of military topics into designated courses in the curriculum, and the acquisition of collaborations and partnerships with various community organizations.

Outcomes: Outcome data was gathered over the last four years utilizing varied research methods of collection including quantitative and qualitative approaches. Data collected from student, faculty, and staff included surveys and focus groups. This data supported the goals of the grant, the processes implemented, and the overall success of the VBSN pathway.

Conclusions: Veterans can face various barriers when separating from the military and entering the academic setting. Additionally, they can face employment difficulties after separation from the military. The VBSN pathway was created to address and minimize these barriers that may affect the likelihood of success for veterans to obtain a BSN and become registered nurse. Furthermore, military culture varies, therefore it is important to educate those who provide services and support to be able to address stereotypes and assumptions. The VBSN pathway data has supported the creation the VBSN pathway that addresses and minimizes barriers that impact veteran's ability to succeed in higher education and increases the number of baccalaureate prepared nurses. Continued efforts to collect data and outcomes are necessary to be able to provide improved mechanisms in supporting the veteran population to be successful in their education as well as their career.

Funding: This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant U11HP28516, "Nurse Education, Practice, Quality and Retention – Veteran's Bachelor of Science in Nursing Program," for \$1,400,000. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS, or the U.S. Government.

SOCIAL DETERMINANTS OF HEALTH AND NURSING EDUCATION

Evaluating a Poverty Simulation in Masters Entry Nursing Students

Jessica E. Draughon Moret, PhD, RN
Assistant Professor of Clinical Nursing
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA

Christy Adams, RN, BSN, MPH
Doctoral Candidate
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA

Kupiri W. Ackerman-Barger, PhD, RN
Assistant Clinical Professor
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA

Susan L. Adams, PhD, RN, NP, CNS
Assistant Clinical Professor
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA

Purpose: The goal of this study was to compare experiences of 1st quarter Masters Entry Program in Nursing (MEPN) students and 5th quarter MEPN students in a Poverty Simulation learning exercise. We aimed to evaluate the impact of Poverty Simulation on students' attitudes in order to facilitate optimal placement of the experience during the 6-quarter MEPN curriculum.

Background: The use of poverty simulations in nursing education is relatively new and the related body of research is developing as nursing schools seek to improve student empathy and understanding of social determinates of poverty and health. Additional research is needed to build the evidence base for this learning experience.

Methods: The Missouri Association Community Action Poverty Simulation was selected because of accessibility and volume of literature supporting the tool. Two tools were used to evaluate student outcomes. The first was a pre and post assessment using Factor One: Civic Action, and Factor Five: Social Justice Attitudes of the Civic Attitudes and Skills Questionnaire (CASQ). The second tool, The Active Learning Scale (TALS), was a post- poverty simulation measure assessing students feelings about the poverty simulation in relationship to their thinking about solutions needed to help the poor. We created correlating open-ended questions for each item of TALS to measure specific learning related to poverty simulation. Descriptive statistics, χ^2 and t-tests were used to evaluate pre- and post-test data. Qualitative descriptive analysis was used to evaluate open-ended question responses.

Results: Fifty-four students participated in the Poverty Simulation in August of 2017: 32 1st quarter and 24 5th quarter students. There were no significant differences between groups on either the pre-test or post-test on any of the scales. Both groups showed an increase in positive attitudes on the Civic Action (*mean change* 0.08 *SD* 0.22 $p < .05$) and Social Justice Attitudes (*mean change* .15 *SD* 0.22) scales. There was no significant difference between groups in change between the pre- and post-tests. On the 7-item Active Learning Scale, the highest scoring item was 'I now understand that poverty is a complex phenomenon': 35 students (64%) strongly agreed. The lowest scoring item was 'I plan to engage in some type of social action': only 17 students (31%) strongly agreed. All students who participated in the poverty simulation agreed the poverty simulation stimulated their thinking. The three learning themes from opened ended questions were: (a) Scarcity of Resources; (b) The Lived Experience of Poverty; and (c) Application of the Lessons Learned to Nursing Practice.

Implications for Translation to Practice: Sequencing of the Poverty Simulation learning experience (either at the beginning or towards the end of the MEPN program) did not appear to make a difference in students' quantitative or qualitative responses. The student identified benefits to Poverty Simulation outweigh the specific location of the experience in the curriculum. A student noted: "It opened up my eyes in the fact that sometimes "bad" choices are often made under pressing circumstances and should not be judged, for there were no "good" options for people to choose from."

SOCIAL DETERMINANTS OF HEALTH AND NURSING EDUCATION

Empathy Levels of New Graduate Nurses in a Nurse Residency Program

*Lauren Rountree, RN, BSN, CCRN
Master of Science in Leadership Student
Betty Irene Moore School of Nursing
Sacramento, CA*

Purpose: The purpose of this study is to determine if empathy levels in new graduate nurses decrease as they advance through a residency program.

Background: Recent research shows that nursing students are graduating from nursing school with lower levels of empathy than when they entered nursing school. Higher levels of empathy are associated with higher quality patient care and lower levels of burnout and stress among nurses. Since empathy can be a protective barrier to burnout and stress, fostering empathy among new nurses is crucial for retention rates. The Institute of Medicine's "Future of Nursing" report recommends that hospitals develop nurse residency programs to retain new nurses. However, the effectiveness of these programs in maintaining empathy among new graduate nurses is unknown.

Methods: This study utilized a quantitative, non-experimental, cross-sectional design. The setting was a 627 bed level I trauma center and academic hospital in Northern California. The sample was comprised of four cohorts of new nurse graduates at the one, four, eight, and ten months mark in a yearlong nurse residency program. The nurse residency program supports new nurse graduates with monthly didactic sessions while the nurses concurrently work in their home units, ranging from acute care floors in the hospital to ambulatory settings. Each cohort was surveyed once between June and July 2018. The outcome measure was the Jefferson Scale of Empathy. The Jefferson Scale of Empathy is a self-report measure containing 20 questions, each with a seven-point Likert scale. The maximum score is 140, while the minimum score is 20. A higher score indicates a more empathetic orientation. Data was analyzed using SPSS software.

Results: Out of 69 eligible participants, 57 were recruited for this study, giving a response rate of 83%. Average empathy scores dropped from the newest cohort with one month of experience to the cohort with eight months of experience (121.59 to 115.64, respectively), but this was deemed to not be statistically significant ($p=0.496$). There was no correlation between time spent in the nurse residency program and empathy score ($p=0.604$). However, there was a statistically significant difference in empathy scores between genders. The average empathy score for males was 112.33, while the average empathy score for females was higher at 121.60 ($p < 0.01$).

Implications for Translation to Practice: Prior studies have reported males as having lower empathy scores than females while in nursing school, but this is the first study to examine levels of empathy in a nurse residency program. To improve the education of future nurses, empathy must be incorporated into nursing education. Studies have shown education to be effective at improving empathy levels. Nurse residency programs should examine the feasibility of incorporating empathy education into their curriculum to narrow this empathy gender gap.

SOCIAL DETERMINANTS OF HEALTH AND NURSING EDUCATION

“The Problem of the Color Line”: Nurse Educators’ Approaches to Social Justice

Claire P. Valderama-Wallace, PhD, MPH, RN
Assistant Professor
California State University, East Bay
Hayward, CA
Claire.valderama-wallace@csueastbay.edu

Purpose: Increasing attention to social determinants of health, health equity, inclusion, and social justice is evident in nursing literature. Lines of inquiry exploring pedagogical embodiment of the core professional nursing value of social justice, however, remain marginal. Ever increasing evidence of inequities in health and health care demand our attention. The purpose of this study was to examine nurse educators’ approaches to social justice in their theory courses.

Background: The very purpose of higher education and its role in the understanding and maintenance of inequality and inequity has been examined at length. Nursing education is siloed and seldom situated within the broader context of higher education. A variety of democratic and transformative pedagogical approaches have been deployed and evaluated in colleges and universities. Such lines of inquiry related to nursing pedagogy are often limited to service learning, cultural humility, attitudes of marginalized populations, professional identity development, advocacy, and the utilization of narrative pedagogy and case-based learning.

Methods: This qualitative study centered a critical examination of participants’ perspectives by utilizing a constructivist grounded theory approach. The analysis emerged from initial then focused coding of 28 interview transcripts and accompanying memos. A constant comparison of new findings with existing data led to the construction of theoretical concepts.

Results: Educators deploy pedagogical approaches as extensions of their conceptualizations of social justice. These include fostering a classroom climate to encourage student engagement, naming social justice in particular ways if at all, and role modeling a critical stance. Several factors influence these approaches, including institutional contexts, curricular opportunities, and the living legacies of othering and residential segregation. The findings emerged along a racial line and, to a lesser degree, educational background and nursing specialty.

Implications: Teaching social justice poses inequitable personal and professional risks with regard to race. Educational background and specialty also emerged, though to a lesser degree. This study illustrates the complexity of decisions made and actions taken inside the classroom, when planning curriculum, and traversing one’s career in academia. Nursing’s role in the promotion of health equity will be fragmented and elusive without further critical self-examination and concrete action to uphold this core professional nursing value.

SOCIAL DETERMINANTS OF HEALTH AND NURSING EDUCATION

Graduate Nursing Students' Views on Addressing Social Determinants to Improve Health

Janet U. Schneiderman, RN, PhD

*Associate Professor of Research, Interim Chair
Department of Nursing, Suzanne Dworak-Peck School of Social Work
University of Southern California, Los Angeles, CA*

Ellen Olshansky, RN, PhD, FWAN, FAAN

*Professor Emerita, Sue and Bill Gross School of Nursing
University of California, Irvine*

*Distinguished Scholar in Nursing Science, Department of Nursing
Suzanne Dworak-Peck School of Social Work, University of Southern California*

Purposes/Aims: To explore the 1.) Perceptions of nursing graduate students regarding how Social Determinants of Health (SDOH) affect patient care and 2.) Ideas nursing students have about how SDOH can be addressed to improve health and health services for their patients.

Rationale/Conceptual Basis/Background: SDOH, which include but are not limited to factors related to the environment, economy, and access to care, have a critical impact on health, and provide an important foundation for health care. The nursing profession has adopted SDOH as one of the central issues affecting health disparities. Although nursing organizations address SDOH in many of their policies and mandates, it is unknown how practicing nurses use this concept to understand their patients' health problems and how this concept affects their practice.

Methods: A qualitative study, using grounded theory methodology, was conducted. Thirteen graduate nursing students, who had practiced as RNs at least a year before entering school and were just beginning their Family Nurse Practitioner (FNP) educational program, were interviewed by phone using a semi-structured interview guide. The interview domains included: 1) ways in which SDOH affect patients' health; 2) the effect of SDOH on nursing practice 3) how nurses can address SDOH to improve health and health care. Interviews lasted approximately an hour and were transcribed verbatim. Data collection and analysis were iterative and ongoing processes. Data analysis was guided by the procedures of grounded theory, beginning with open coding, moving to selective coding, and eventual theoretical integration.

Results: The two primary themes were 1.) SDOH are integrated into their patient care and 2.) Health care needs to change based on SDOH. The participants identified that educating patients is difficult due to SDOH, and nurses need to be aware of challenges patient face based on their social, economic, and physical environment. Adherence to health care recommendations is not simple and depends on support and access. The participants also spoke about treating patients based on the patient's own values and encouraging patient's ownership of their health plan. The second theme of health care change included an emphasis of health equity, making sure that money does not dictate who receives services. The participants noted the coupling of physical and psychological health was imperative. The participants stated that changes in the health care system need to start on the ground, one patient at a time, and include all health professions. The participants in the study wanted nurses to be vocal advocates for health care change.

Implications for Translation to Practice/Further Research: The nursing students who participated in this study were just beginning their FNP graduate education, but they already have a good grasp on how SDOH will affect their primary care practices. Capitalizing on the nursing students' enthusiasm for change by providing advocacy experiences while in school and beyond could lead to health care changes that may provide better health care for all.

Funding: This study was funded by the University of Southern California Suzanne Dworak-Peck School of Social Work, Department of Children, Youth, and Families Department.

Abstracts of Podium Presentations

SUPPORTING THE NURSING WORKFORCE

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Implementing a Nurse Manager Forum to Reduce Role Stress and Build Resiliency

*Kim Failla, PhD, RN, NE-BC
Nurse Manager, Nurse Residency Program
Sharp Memorial Hospital
San Diego, CA*

*Jan Stichler, DNS, RN, NEA-BC, FACHE,
FAAN, Consultant, Research & Evidence-Based
Practice, Center of Nursing Excellence, Sharp
HealthCare
San Diego, CA*

*Christine Prewitt, MSN, RN
Nurse Manager
Cardiac Pulmonary Progressive Care
Sharp Memorial Hospital
San Diego, CA*

Purpose/Aims: Nurse Managers (NMs) are frontline leaders and subject to demands from directors, physicians, clinical nurses, patients, and families. NMs directly influence safety, quality, employee engagement, operational, and financial success. A Nurse Manager Forum (NMF) was established to support NMs in navigating their challenging roles, reduce role stress and promote professional growth.

Rationale/Background: The role of the NM is one of the most difficult in the healthcare leadership hierarchy. NMs are often required to complete assignments causing personal moral distress; manage unrealistic budgets; and meet performance targets when they are not in complete control. NMs are the interface between administration and the front-line staff, so it is important to reduce NM stress and ways to improve coping and resiliency.

Best Practice: With the endorsement of the Chief Nursing Officer (CNO) of a Magnet designated hospital, two experienced NMs guided the development of the mission and charter of a NMF with the other NMs. Monthly meetings focused on sharing best practices, strategies to manage challenging issues, and wisdom of more experienced NMs with those less experienced. Monthly topics included: (1) unit staffing and scheduling; (2) annual staff performance and peer evaluations; (3) implementing organizational changes; (4) managing budgets and limited resources; (5) professional development; (6) recruitment and onboarding; (7) regulatory survey readiness; (8) networking, relationship building, and mentoring; and (9) self-care. An annual retreat provided additional social and colleague support.

To evaluate the effectiveness of the NMF over time, a baseline survey measuring job satisfaction, stress, burnout, social support, leader-member exchange, and resiliency was administered in 2016 and 2018. All the scales were used in previously published research with reported acceptable reliability coefficients.

Outcomes: The sample consisted of 14 NMs with means of 25 years of experience as a nurse, 5.5 years in their current role, and 90 direct reports. The two-year retention for NMs was 92% with only one manager leaving the organization for a promotion. The percentage of NMs ($N = 13$) with master's degrees increased from 78.4% in 2016 to 92% in 2018 supporting the organization's Magnet initiative. A statistically significant improvement was noted in NMs perceptions of social support in their roles from 2016 to 2018 ($p = .008$). While there were improvements in the means from 2016 to 2018 in the NMs' perceptions of job satisfaction, stress in general, subjective stress, leader-member exchange, and resiliency and reductions in negative affectivity and burnout, these changes were not statistically significant. However, the sample size was likely too small to reach significance.

Nursing Implications: The findings of this program evaluation support previously reported studies about the importance of social support and leader-member exchange for NMs to be successful in their roles. NMs must be prepared for role demands, receive continual peer and leader support and mentorship in the role to reduce job stress and burnout. A NMF is an effective organizational strategy to support NMs and build colleague support reducing role stress.

SUPPORTING THE NURSING WORKFORCE

Examining the Nursing Hand-Off Using within Methods Triangulation

*Ben Galatzan, MSN, RN
Doctoral Student
College of Nursing
University of Arizona
Tucson, AZ*

*Jane M. Carrington, PhD, RN, FAAN
Associate Professor
College of Nursing
University of Arizona
Tucson, AZ*

Purpose: Approximately 10,000 deaths occur annually due to miscommunication between healthcare providers. Miscommunication between healthcare providers during the transfer of care accounts for 80% of sentinel events occurring in the hospital setting. The errors in communication were identified as the root cause for 86% of delays in treatment, 75% of hospital-associated infections and complications, and omitted or repeated testing and delays in diagnosis. The transfer of care communication between providers is called the “hand-off”, “change of shift report”, or “handover”. The hand-off for purposes of this study is defined as the process of transferring patient care and responsibility from one nurse to another at the change of shift. Here we present the application of a within methods triangulation data analysis using recorded and transcribed hand-off communication data.

Method: After obtaining IRB approval a study was conducted to test the data collection and data analysis methods for examining the hand-off communication. The study was conducted on medical-surgical unit in an urban hospital in Colorado. The sample consisted of four nurses, two hand-offs. Inclusion criteria stated the nurse must be an RN and the patient must have experienced a clinical event. Clinical Event (CE) is defined as an unexpected and sudden change in the patient’s condition in the following areas: bleeding, pain, fever, and changes in output, respiratory status, or level of consciousness. The data collection consisted of simultaneously digital audio recording of the hand-off and observation of that same hand-off. The digitally recorded hand-offs were transcribed and verified for accuracy and then analyzed using content analysis and linguistic inquiry word count (LIWC), a natural language processing program. The LIWC program analyzed how the content (data, information, and knowledge) of the hand-off was communicated. The language used reflects the nurse’s cognitive, emotional, and psychosocial processes involved in the hand-off communication.

Results: Content analysis revealed a majority of content was communicated in the form of data and information and minimal knowledge. The LIWC analysis results focused on the following areas: analytical thinking, clout, authentic, emotional tone, time orientation, and drives. The analytical thinking score reflected the use of informal and narrative thinking. The clout indicated the nurses spoke as an expert about the patient but were also tentative. The authenticity analysis reflected a guard and distant communication style. The emotional tone of the hand-off was anxious, sad, and fear. The hand-off was orientated in past and present events but not future. Despite the patient having experienced a CE there was minimal drive to communicate a risk to patient in the hand-off.

Implication for Future Research: The within methods triangulation data analysis offers the researcher a new method to analyze communications in the healthcare setting. This innovated method provides the opportunity to ask new research questions.

Conclusion: The digital audio recording and observation of the hand-off provided a plethora of data to be analyzed. The within methods triangulation data analysis offers insight into what was being communicated (data, information, knowledge) and how the message was communicated (cognitive, emotional, and psychosocial processes).

SUPPORTING THE NURSING WORKFORCE

Compassion Fatigue Education for Nurses Working in Skilled Nursing Facilities

*Marlene Steinheiser, PhD, RN
Graduate of the College of Nursing
University of Arizona
Tucson, AZ*

*Kate Sheppard, PhD, FNP, PMHNP,
FAAN, FAANP
Clinical Associate Professor (retired)
College of Nursing, University of Arizona
Tucson, AZ*

Purpose: The purpose of this presentation is to describe the need for education to reduce the risk of compassion fatigue (CF) among nurses working in skilled nursing facilities (SNFs).

Background: Nurses who care for older adults in SNFs expend compassion energy, which may increase their risk for CF. CF is defined as negative feelings associated with providing nursing care and is comprised of burnout and secondary traumatic stress. Symptoms manifest physically, emotionally, spiritually or psychologically. The cumulative effects of CF may significantly impact health care by decreasing quality care, compromising patient outcomes, and contribute to the nursing shortage as nurses prematurely leave the profession.

Method: This presentation stems from findings of a hermeneutic, interpretive phenomenological study that described CF among registered nurses ($N=8$) caring for older adults in SNFs. Three face-to-face interviews were conducted with each participant. Concurrent data analysis facilitated formulation of mutual understanding of the phenomenon. Self-reflection, journaling, record keeping, and use of direct quotes enhanced trustworthiness of this study.

Results: Central concerns included: 1) a desire to make a difference in the lives of the residents, and 2) emotional conflict. When participants felt unable to make desired differences in care, they developed symptoms of CF which was often compounded by the eventual death of residents. Participants described a lack of resources and knowledge to manage their grief. Emotional conflict also attributed to symptoms of CF which stemmed from challenges of caring for residents and their families, personal circumstances, and the work environment. Many of the participants did not initially self-identify with the symptoms of CF, but did report headaches, sleep disturbances, gastrointestinal issues, continual sadness, avoidance of social activities, feeling scattered at work, and distancing from residents. During the study, three participants made the decision to seek employment outside the SNF setting.

Implications: Making a difference was a central concern which was inhibited by work constraints and residents' deteriorating conditions suggesting a need for SNF leadership education to provide an understanding of CF risks among nurses and the potential impact upon resident care. During the interviews, two participants self-identified with CF and the associated symptoms; each made changes in their self-care practices indicating a need for education to recognize the symptoms of CF and self-care strategies. Emotional attachment to SNF residents suggests the need for professional boundary education. Grief preparedness, training and support can improve the experiences of nurses caring for residents during the end-of-life. Because there are no published studies inclusive of CF in this targeted population, further research to define CF among nurses and education is proposed.

SUPPORTING THE NURSING WORKFORCE

Characterizing Nursing Workflow in Emergency Departments Using EHR Data

Mustafa Ozkaynak, PhD, Assistant Professor, College of Nursing
Claudia Amura, PhD, MPH, Research Project Coordinator, College of Nursing
Sharon Sables-Baus, PhD, MPA, PCNS-BC, Associate Professor, College of Nursing
Marion Sills, MD, MPH, Professor, School of Medicine

University of Colorado, Aurora, CO

Aim: Evaluate the value of visualization of electronic health record (EHR) data in characterizing nursing workflow in emergency departments (EDs) to develop informatics and organizational interventions.

Background: Our previous research identified that (1) Nurses have a pivotal role in care delivery in EDs; (2) Nursing care can be improved using informatics and other organizational interventions. Understanding nursing workflow is essential to better understand the link between the role of nursing care and patient outcomes. Moreover, such understanding can inform the development of organizational interventions.

Methods: We extracted EHR data for all visits at which asthma-specific treatment was administered (n=17928), in a network of six EDs and urgent care centers in 2014-2016 with an asthma diagnosis. We focused on a single type of condition to ensure data homogeneity and selected asthma because it is a common reason for seeking emergent care. We examined the following nursing activities and their temporal organization during the ED stay: medication administration (anti-asthmatics, corticosteroids, magnesium sulfate), triage, and nurse assignments (proxy for nurse assessment). Nursing workflow in each ED was visualized for two different modes of transportation (walk-in and ambulance) and for different acuity levels using Eventflow (<http://hcil.umd.edu/eventflow/>). The primary outcome of interest was the duration between time at which guideline-defined discharge criteria were met and time of discharge.

Results: Among all encounters, the majority presented with an acute severity at triage (Acuties: ESI-2: 17.8%, ESI-3: 53.2%; ESI-4: 26.0%). The average time between discharge criteria being met and actual discharge from the ED (n=7577) was 161.12 minutes. A total of 8485 encounters did not have discharge reached conditions documented, and 1866 patients were admitted into the hospital so they were not included in the analysis of discharge from ED outcomes. Our analyses revealed that the outcome of interest varied with setting, acuity, mode of transportation and crowdedness in the ED. The visualization of the selected nursing activities (among 556212 events during that time frame) over time demonstrated differences in temporality across setting (with 47.1 % encounters from the main hospital), acuity levels and mode of transportation (although the majority 94.5% were walk-ins) and crowdedness in the ED. Consistent with our previous work, data analysis revealed a weak relationship between nursing workflow and patient's discharge from criteria reached time.

Implications: This study can inform the development of organizational interventions to support nursing activities. Understanding the factors that affect the duration from when discharge conditions are met to actual discharge is critical to (1) develop relevant organizational interventions to shorten this time and (2) develop prediction models for length of stay that will allow better planning for nursing care. This study also revealed some important strengths and limitations of visualization of EHR data to characterize nursing workflow in emergency departments. This rich data can allow the use of sophisticated visual analytics techniques. However, to date, the diverse nature of nursing care is only partially captured.

Funding: This study was supported by University of Colorado College of Nursing intramural award and NIH/NCATS Colorado CTSA Grant Number ULI TR002535.

Abstracts of Podium Presentations

THEORIES, CONCEPTS, INSTRUMENTS

THEORIES, CONCEPTS, INSTRUMENTS

Identification of Tipping Points in Aging Populations: Concept Development

Cheryl L. Lacasse, PhD, RN, AOCNS
Janice D. Crist, PhD, RN, FWAN, FAAN
Kimberly D. Shea, PhD, RN, CHPN,
Beverly J. Heasley, MBA, RN, FNGNA
College of Nursing

Linda R. Phillips, PhD, RN, FAAN, FGSA
Arizona Center on Aging

Jian Liu, PhD
College of Engineering

The University of Arizona
Tucson, AZ

Purpose: Older adults with multiple chronic conditions (MCCs) as part of caregiving families (older adults and family caregivers) are at high risk for safety concerns, e.g., becoming frail, confused, or burdened and needing long term support services (LTSS) emergently to continue to age in place. Indicators for frailty, cognitive function, and caregiving burden are measurable and can provide predictors for “tipping points” for older adults. Early intervention before a critical tipping point may prevent rapid decline. The purpose of this presentation is to describe the concept of tipping points in aging as a foundation for the development of innovative interventions that positively impact caregiving families through early identification of impending critical tipping points.

Definition of Concept: Tipping points in aging is defined as a sudden change in an older adult’s functioning (physical, cognitive, psychological, social, and/or spiritual) and family caregiving situation that is preceded by an acute or chronic trajectory of decline and results in a major change in support to attain and maintain health and wellbeing. A tipping point in older adult care may lead to a change in level of care that is not aligned with family wishes for older adults to age in place.

Concept Development Approach: The concept of tipping points is constructed from the integration of interprofessional providers’ clinical wisdom of older adult care and evidence-based measures for physical, cognitive, and social functioning, frailty, caregiving burden, cultural preferences in healthcare, and knowledge of community resources. Specific risk factors in the tipping points model include: cognition, mobility, nutrition, ability to perform activities of daily living [ADLs], increased fall risk, urinary incontinence, isolation, anxiety, depression, and decline in ability to engage in instrumental ADLs. Elements of risk reduction through early identification of situations preceding tipping points are key in preventing a tipping point in older adults with MCCs.

Link to Nursing Practice and Research: There is minimal research on tipping points in older adults. Transdisciplinary research is key in determining critical risk factors and the best method for early detection using technological monitoring, machine learning, and algorithms. Clinical application of the tipping points model includes accurate early identification of risk factors preceding a tipping point, direct acknowledgement of an impending tipping point by caregiving families, and exploring LTSS choices to prevent a tipping point from occurring.

Conclusions: Exploration of tipping points for caregiving families may lead to identification of critical risk factors experienced in aging adults with MCCs, i.e., functional, social, and emotional decline, and caregiving crises (caregiver illness, burnout, abuse). Research on early identification of tipping points blends ongoing clinical assessments with electronic monitoring. Early identification of tipping points can have a positive impact on time-sensitive clinical care to support older adults, especially those with distinct cultural needs, such as Mexican Americans, to age in place with optimal quality of life. Transdisciplinary development of innovative wearable technology with algorithms to detect a critical cluster of risk factors before a tipping point occurs will provide older adults and their families with options to support optimal aging.

THEORIES, CONCEPTS, INSTRUMENTS

ANCC's Forces of Magnetism: An Instrument Designed to Measure Nurse Leaders' Behavior

Holly Hall Ed.D., MSHA, RN, Nurse Consultant, Holly Hall Consulting, Dayton, OH
servantleader@drhollyhall.com

Purpose/Aims: The purpose of this study was to develop a multi-faceted instrument to measure the degree of servant-leadership behaviors of nurse leaders that aligns with the American Nurses Credentialing Center (ANCC) 14 Forces of Magnetism (FOM), as rated by their supervisors, peers, staff, and self.

Rationale/Conceptual Basis/Background: There are no instruments that measure servant-leadership characteristics in the health care industry. Servant-leadership is an empowering leadership style, therefore, encourages the personal growth of nurses and simultaneously promotes the improved delivery of patient centered care through a combination of interdisciplinary team-work, shared decision-making and ethical behavior. The 14 FOM establish the essential elements of nursing excellence and high-quality care in the hospital environment; and, are considered significant drivers of nurse satisfaction, patient quality outcomes, superior organizational performance and improved community health and welfare.

Method: The selection of experts complied with the *Standards for Education and Psychological Testing*. The investigator used a panel of seven experts to evaluate 53 individual instrument items as well as the entire instrument. The selection of individuals used in the judgment-quantification stage of content validation were based on the individual's expertise with the Magnet® credentialing process, servant-leadership, and instrument construction. The reviewers had knowledge of the study's background, concepts, theory, and problems which governed the topic content of the instrument. Content experts included: two experts with specialized knowledge in Magnet Credentialing, two experts with knowledge on instrument construction, two content experts with knowledge on the theory and practices of servant-leadership, and one expert with knowledge on both the theory of servant-leadership and instrument construction. In advance, experts were e-mailed specific instructions on how to complete the instrument review questionnaire. Experts were instructed to rate how representative individual items were of the content domain and whether the content domain adequately measured all dimensions of the construct on a relevance scale of (1) not relevant to (4) highly relevant. Next, experts were interviewed via phone and in-person by team members to gather the data. During the interview, experts were asked to suggest revisions for items that were not consistent with the conceptual definition or not representative of the content. Lastly, experts were asked to rate the clarity of the item construction and wording, and evaluate the comprehensiveness of the instrument. All interviews were conducted consistently.

Method: Content validity for the instrument had a CVI of 1. All reviewers were in-agreement.

Results: This research produced a comprehensive set of new competencies to complement the existing, well established core competencies for nurse leaders providing an alternative perspective of leadership that can be used to complement ANCC's transformational leadership. Additionally, this study fulfilled a need in nursing by adding the first validated, reliable instrument that can be used to measure nurse leaders' servant-leader characteristics in the health care environment that aligns with the Magnet® Credential known for creating cultures of excellence in nursing.

Funding: Research partially funded by Sigma Theta Tau International Foundation grant number 0017733061

THEORIES, CONCEPTS, INSTRUMENTS

Professional Governance Scale: Eliminating Items When All Are “Good”

Joyce A. Verran, PhD, RN, FAAN
Professor, College of Nursing
Anschutz Medical Campus, Univ. of CO
Tucson, AZ

Paula M. Meek, PhD, RN, FAAN
Professor and Senior Scholar
College of Nursing
Anschutz Medical Campus, Univ. of CO
Denver, CO

Marla Weston, PhD, RN FAAM
Chief Executive Officer
Weston Consulting, LLC
Washington, D.C.

Joanne Clavelle, DNP, RN, NEA-BC, FACHE
Vice President/
Chief Nursing Officer-West
GetWellNetwork, Inc.
Wheat Ridge, CO

Tim Porter O’Grady, DM, EdD, APRN, NEA-BC, FAAN
Senior Partner, Health Systems
Tim Porter-O’Grady Associates
Professor, School of Nursing
Emory University, Atlanta, GA

Purpose: The purpose of this presentation is to present approaches to reducing scale length by eliminating items even through more traditional psychometrical analysis shows all items to be strongly associated with the concept.

Background: The Professional Governance Scale (PGS) was developed through integrated literature reviews for 8 related concepts. The 100 items developed to represent the four attributes of professional governance were submitted to content validation with 14 experts resulting in 75 items. To reduce respondent burden, a scale of between 40-45 items was desired. Therefore, a study to collect respondent data was initiated for psychometric testing and item reduction. The survey included extensive demographics, the 75 PGS items; and 3 additional scales (Control Over Nursing Practice, Job Satisfaction and Hospital Culture Scale) to evaluate convergent and divergent validity.

Methods: Five hospitals in the mid-west collected data from all RNs in each setting. The potential response rate from all five hospitals was 5011; the initial return rate was 818 with an effective response of 563. The 563 complete questionnaires were divided into two data bases of 222 for exploratory factor analysis and 341 for further examination and confirmatory factor analysis. Only the results of the exploratory work were used to examine and potentially eliminate items from the four subscales representing the attributes in the PGS. Analysis of each item included means, variance, inter-item correlations within each attribute. Initial Exploratory Factor Analyses (EFA) by subscales were performed, with minimal information related to item quality obtained as only two items needed to be eliminated based on relationship to the concept. Usually an item analysis is used to provide information to assist with understanding of the EFA results. However, the research team returned to the item analysis and utilized information on ceiling effects, lack of variability and interitem correlations above the usual to eliminate items. Decisions on item elimination were based on specified criteria for ceiling effect (Mean > 6.00 on 7-point scale), variability (Standard Deviation < 1.5 with a 7-point response scale) and redundancy ($\geq 25\%$ of inter-item Attribute Correlations > 70 %). Details of the team process used in item elimination will be further described.

Results: Seventeen of the items eliminated were due to ceiling effect and/or lack of variability. Ten items were removed due to redundancy, and three were eliminated due to content issues. With the two items from the EFA, 32 items in total were eliminated and the PGS was reduced to 43 items which was within the initial desired length.

Implications for Research: The background work on the concepts related to Professional Governance and the extensive content validity procedures resulted in 73 items that were strongly related to the attributes. Examining items beyond the usual construct validity results proved to be a unique and an effective way to eliminate some that were considered “good” but were less effective in capturing the concept. Further testing was required with this set of items to examine for ability to discriminate levels of professional governance.

THEORIES, CONCEPTS, INSTRUMENTS

Use of Electronic Health Records & Text Mining in Perinatal Mental Health Research

Gwen Latendresse, PhD, CNM, FACNM
Associate Professor, College of Nursing
University of Utah
Salt Lake City, UT
gwen.latendresse@nurs.utah.edu

Vasee Sivaloganathan, PhD
University of Utah
Salt Lake City, UT

Study Purpose/Aims: The overall purpose of the study was to use structured and unstructured Electronic Health Record (EHR) data to describe the screening, detection, treatment, and referral practices related to Perinatal Depression and Anxiety (PDA). Study aims: 1) Describe the occurrence of PDA; 2) Describe the screening, treatment, and referral practices during the study period; 3) Compare results between the structured and unstructured data found in electronic health records.

Rationale/Background: The use of EHR has facilitated the description of screening and treatment practices, primarily based on structured data (diagnostic and billing codes, screening tools, and medication records). However, most studies lack the type of detail that could better inform researchers and clinicians about the timing and variety of screening, and the specific treatments and referral practices currently in place. While structured data in the EHR can be queried and used to describe some aspects of the provider/patient encounter, unstructured data (i.e. free text in progress notes) may provide more depth regarding the health care visit and practices related to perinatal mental health.

Methods: Using the Data Resource Center (DRC) and the Enterprise Data Warehouse (EDW) of a large academic healthcare system, algorithms were developed to query the EHR. The variables of interest included perinatal depression and anxiety. We queried for structured screening tools, such as the Edinburgh Postnatal Depression Scale (EPDS) and General Anxiety Disorder (GAD)-7 Anxiety Scale. We queried the medication records, problem lists, billing codes, and referrals for mental health services. To capture the practices of screening and referral in free-text EHR notes, a set of key words and phrases were developed for mining these unstructured documents.

Findings: A total of 7624 births occurred at the facility between May 1, 2014 and April 30, 2016. The occurrence of PDA for all women giving birth during the study period, by any method of query was 16% during pregnancy, compared to 7.2% postpartum. Use of structured screening tools was nearly nonexistent. Billing codes were the predominant method for capturing detection of depression during pregnancy (14%). The problem list captured only 2.2% of cases. Differences between structured and unstructured data were notable, in that < 10% of unstructured data corroborated the structured data.

Implications: PD is the most common complication of childbearing, more common than preterm birth, gestational diabetes, and pre-eclampsia. ACOG and the USPSTF recommend screening for PD during pregnancy and postpartum. However, for this academic healthcare setting, the screening rate was quite low, and the PD rate was primarily captured by billing codes. This suggests a high importance of billing, as opposed to a focus on screening, treatment, and documentation of treatment options. Recommendations include use of the EHR as a tool for increasing PD screening in the clinical setting, as well as an approach to informing quality improvement projects.

Funding: Funding support was provided by a Burton Research Pilot Grant and the University of Utah College of Nursing Research Center.

THEORIES, CONCEPTS, INSTRUMENTS

LGBTQ Parental Role Attainment: Situation Specific Theory Development

Susan Ann Vitale, PhD, RN, PNP, ANP-C
Professor, Nursing
Molloy College
Rockville Centre, NY

Purpose/Aims: This research aimed to explore parental role attainment by lesbian, gay, bi-sexual, transgender, or questioning (LGBTQ) parents through a theoretical perspective.

Rational/Conceptual Basis/Background: There's limited understanding of LGBTQ parents raising a child. Health care providers have inadequate resources concerning development of that parental role. The impetus for this research focus derived from the goal of understanding LGBTQ concerns (Healthy People 2020 www.healthypeople.gov).

Methods: A qualitative, grounded theory research design guided development of a potential situation specific theory. Individual or couple dyads from snowball sampling provided audio-taped interviews in-person, by telephone or email with follow-up contact as needed. Inclusion criteria was being LGBTQ and having a biologic or adopted child of any age, raised by the LGBTQ individual/couple. Also included were those raising children from a prior heterosexual relationship. Participants were asked to share about positive/negative influences and concerns, family relationships, values, and social/political, community or cultural issues. Constant comparative techniques led to connections between concepts and categories. Theory was inductively produced from themes grounded in the data. A core identified theme addressed the basic social problem of developing a parental role as an LGBTQ individual, consistent with grounded theory methodology (Strauss & Corbin, 1990). Ramona Mercer's Nursing Theory of Maternal Role Attainment offered a theoretical framework. A non-gender specific parenting role was followed in this study in place of Mercer's gender specific "mothering" role. Data from this study was compared to Mercer's description of transition to a parenting role in relation to a microsystem and macrosystem of influences.

Results: There were 20 participants (9 couples; 2 single); 13 lesbian, 7 gay; ages 25-71; 10 households with biologic children and 1 adopted; 16 had college and 4 high school degrees. The participants described themselves as "no different from anyone else." And that "we are as varied as heterosexual parents are." The macrosystem of community, cultural, and political influences was an overarching concern placing the family at risk. Past experiences of harassment, bullying, or alienation had them approach the role in a "wise and protective" stance for what they knew their children had or might have to endure.

The core concept of: "We love our children" became evident.

Other categories/concepts identified were:

1. "We are just another family like anyone else's"
2. "We're working extra hard at this-please respect us and be nice to our children"
3. "Protective of our children-must make them strong-worry for their future-don't want them to go through what we did"
4. "Who is on our side-we appreciate our allies"
5. "Family/friends support-some wonderful, some not so good"

Implications: The findings led to anticipatory guidance and inform health care professionals and educators of issues surrounding parental role attainment. The study was limited in scope by a lack of bi-sexual, transgender or questioning individuals. Research should continue to explore a wider population and evaluate openly affirming practice and policy initiatives.

THEORIES, CONCEPTS, INSTRUMENTS

Psychometric Field Test of Hung's Postpartum Stress Scale

Barbara Mott, PhD, RN

Assistant Professor

Department of Nursing Education

Shepherd University

Shepherdstown, WV

Vicki Denson, PhD, MSN, WHNP-BC, CNE

Clinical Assistant Professor

College of Nursing

Washington State University

Vancouver, WA

Sally Rodriguez, BSN, RN

Student Nurse

Department of Nursing Education

Shepherd University

Shepherdstown, WV

Aim: This research project examined the conciseness and cultural appropriateness of the items in Hung's Postpartum Stress Scale (HPSS) with postpartum mothers in the United States. A factor analysis and statistical analyses were conducted to determine the stability of the original HPSS factor structure, including validity and reliability of the original and revised tools.

Rationale: The impact of multiple roles that mothers encounter predisposes them to psychosocial issues, negatively impacting maternal confidence and resulting in poor mother-infant bonding and infant development. Lack of social support, a construct of postpartum stress, is a predictor of maternal depression. The development of Hung's Postpartum Stress Scale (HPSS) was tested using Taiwanese women and demonstrated a three factor solution (maternal role attainment, lack of social support, negative body changes) with 62 items. Many of these items did not demonstrate stressors with women in the United States.

Methods: A convenience sample of 105 postpartum women was recruited in 2014 from two mid-Atlantic hospitals and an additional convenience sample of 199 postpartum women was recruited from one mid-Atlantic hospital. These 304 women completed the 62-item HPSS. Parallel analysis was performed to determine the number of factors to retain from the data. These factors were analyzed using an orthogonal varimax rotation to determine which items should be deleted due to the lack of significant loading or loading on multiple factors. An additional 102 convenience sample of postpartum women was recruited to complete the revised 44-item HPSS in order to evaluate the reliability and validity of the revised instrument.

Results: The revised HPSS instrument demonstrated a four factor solution with 44 items. Compared to the original instrument, 18 items were deleted and eight items changed factors. The new factor identified is loss of control and the other three factors were identical to those discovered by Hung. Many of the deleted items and items which changed factors demonstrated cultural significance to the Taiwanese population, but not the United States population. The reliability of the revised instrument was satisfactory with Cronbach's alpha = .954. Construct validity was demonstrated between the original ($r = -.188$) and revised ($r = -.205$) instruments in number of children as well as the subscale of maternal role attainment in the original ($r = -.226$) and revised ($r = -.268$) instruments.

Implications for Translation to Practice: This study supports the findings that women from the United States perceive postpartum stress as a component of four factors. Women in the United States are individualistic where the self is emphasized as independent. The Eastern hemisphere cultures are collectivistic and have an emphasis on interdependence. These underlying societal differences play a role in how each woman perceives herself. Eighteen of the items on the original HPSS did not apply to the women from the United States, likely due to cultural differences. The revised HPSS-44 is concise and culturally appropriate for postpartum women in the United States and demonstrates validity and reliability.

Abstracts of Podium Presentations

TOPICS IN TECHNOLOGY

TOPICS IN TECHNOLOGY

Targeted NEC-ZERO Dissemination to Reach Caregivers of Premature Infants

Sheila M. Gephart, PhD, RN
Associate Professor
The University of Arizona
College of Nursing
Tucson, AZ

Christina Wyles, MLIS, MSN, RN
PhD Student & “NEC-Zero” Coordinator
The University of Arizona
College of Nursing
Tucson, AZ

Maribeth Slobodnik, BSN, MLS
Librarian
The University of Arizona
Health Sciences Library
Tucson, AZ

Purposes/Aims: The goal of the NEC-Zero project is to eliminate necrotizing enterocolitis (NEC) to “zero cases” by increasing access to evidence-based information (including a website, brochures, video novellas and clinical tools) and promoting technology to implement best practice. Project aims were to: 1) Refine the NEC-Zero toolkit to enhance multi-media and Spanish content; 2) Expand awareness about the NEC-Zero and National Library of Medicine (NLM) tools through webinars, and 3) Improve accessibility and responsiveness of web delivery to reach consumers and healthcare decision-makers.

Rationale: NEC, a devastating intestinal complication that involves death of tissue that can spread to the whole body, impact mostly preterm infants and incurs high mortality and cost. Parents wish to receive consistent messaging about NEC, its risks, its warning signs and how they can participate in preventing it.

Description of Approach: A toolkit for caregivers and parents was developed including brochures, a website, a checklist, risk score (previously tested) and promotional video. We worked closely with Premie Parent advocacy groups (NEC Society, Peekaboo ICU and Premie Parent Alliance) to promote the two webinars. Accessibility was accomplished by adding captions to multi-media content and adding responsive features to the website to allow use on mobile devices. NLM sites (LactMed, Medline and MedlinePlus) were linked to the website. English brochures (3) were translated into Spanish, vetted with promotoras and verified for accuracy by a medical translator. A promotional video, “NEC Prevention through Collaboration” to foster engagement of families to avoid NEC was created with the NEC Society. Conference-based outreach was delivered via the Library Association, the regional nurse practitioner meeting, the Arizona Perinatal Trust, and via the University of New Mexico Project Echo seminar.

Outcomes Achieved: Visibility of necrotizing enterocolitis has increased. This is partially reflected by the new visits to the NEC-Zero Website from February to March (87% increase / N=1534). We had 170 people register for webinar #1 and 254 registered for webinar #2. Of those, 78 attended webinar #1 and 89 attended webinar #2- representing nearly every US state. The majority of attendees for both webinars stated that they were introduced to at least one health information resource or tool and that they learned a new skill they plan to use. In post-webinar evaluations, attendees cited their intention to share information about the signs and symptoms of NEC, the GutCheck^{NEC} tool, the use of feeding protocols and other resources with parents and health care professionals. Offering the webinars increased website traffic to 1520 users compared to 119 before and increasing the # of sessions to 2015 from 175. There was a 783% increase in page views although session duration decreased by 25%. Top locations reached were in Arizona, New York, Brazil, Los Angeles, Texas, Florida, and Hawaii across all six inhabited continents.

Conclusions: Partnering with existing consumer-advocacy groups increased the dissemination reach and spawned enthusiasm for the project. Hosting two webinars effectively increased traffic to the website and synergy was fostered by integrating two librarians into our team.

Funding: Agency for Healthcare Research and Quality (K08HS022908), Robert Wood Johnson Foundation (72114) and the National Library of Medicine (NLM)/ National Institutes of Health (NIH) (UG4LM012341). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health, AHRQ or Robert Wood Johnson Foundation.

TOPICS IN TECHNOLOGY

Activity-Aware Medication Prompts & Bluetooth Pillbox Usability & Acceptability

Jessica Ardo, MSW, Clinical Research Manager¹

Diana Guijarro, BA, Clinical Research Coordinator Assistant¹

Hassan G. Zadeh (Ghasemzadeh), PhD, Assistant Professor²

Lorraine Evangelista, PhD, RN, FAHA, FAAN, Professor¹

¹*Sue & Bill Gross School of Nursing, University of California, Irvine, CA*

²*School of Electrical Engineering & Comp. Science, Wash. State Univ., Pullman, WA*

Purpose/Aims: To examine usability (e.g., efficiency, learnability) and acceptability (e.g., user experience, perceived control) of the activity-aware medication prompting application and Bluetooth pill bottle (i.e. Pillsy) in a sample of adults diagnosed with heart failure or at risk of cardiovascular disease (CVD). This feasibility study was conducted as part of a larger study to design and evaluate machine learning-based software algorithms that recognize daily activities, provide activity-aware medication reminders and provide insights on intervention timings that yield successful medication compliance.

Background: Medication adherence has been identified as one potentially modifiable factor that contributes to increased morbidity and remains a great challenge for many adults diagnosed with heart failure or at risk of CVD (e.g., hypertension, hyperlipidemia, diabetes, metabolic syndrome) due to decreased knowledge of medication self-management. Novel strategies have been proposed to improve medication adherence. However, medication adherence outcomes have primarily been tracked using self-report and therefore success with these interventions varies widely. The use of intelligent technologies to monitor medication adherence while promising warrants additional testing and validation. It is important to measure and take into account end users' perceptions of usability and acceptability of these technologies as they are being developed.

Methods: A software algorithm was developed and tested in adults diagnosed with heart failure or at risk of CVD (N = 12) to recognize daily behavior contexts that can be characterized and tracked with minimal user input using machine learning combined with automated activity discovery. Participants were given the Pillsy device to use for 8 weeks, from which medication adherence rates were monitored. Usability and acceptability of the platform were assessed at study completion using a Usability Survey and open-ended questions.

Results: Participants (33.3 % male; 66.7% female; average age 55.00, ±10.574) reported moderate to high levels of usefulness and acceptability (see Table). Participants claimed that the platform and Pillsy devices were useful, user-friendly and easy to learn and understand, but did not feel that it helped them understand their illness, influence a change in health habits or impact their feelings of control.

Implications: This study highlights the importance of seeking end-user feedback in the development of intelligent technologies. Participants' perceptions of usability and acceptability are warranted to ensure that these applications will achieve their intended aim of improving medication adherence and ultimately human health and health care delivery.

Usability Subscale Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Usefulness	12	7	23	14.50	5.000
Ease of Use	12	11	20	15.25	3.441
Learnability	12	9	19	13.42	2.712
User Experience	12	8	28	17.83	5.937
Attitudinal Control	11	4	13	8.45	2.583
Cognitive Control	12	0	11	7.17	3.380
Valid N (listwise)	11				

Funding: The authors would like to acknowledge funding from the National Institutes of Health, Health and Human Services, award # 1R21NR015410.

TOPICS IN TECHNOLOGY

Co-Design to Validate Text Messages for Adults with Cardiovascular Risk

Jessica Ardo, MSW
Clinical Research Manager
Sue & Bill Gross School of Nursing,
University of California, Irvine, CA

Jung-Ah Lee, PhD, RN
Associate Professor
Sue & Bill Gross School of Nursing
University of California, Irvine, CA

Janet Hildebrand, PhD, FNP, CDE
Nurse Practitioner/Clinician
La Amistad Family Health Center
Orange, CA

Diana Guijarro, BA
Clinical Research Coordinator Assistant
Sue & Bill Gross School of Nursing
University of California, Irvine, CA

Hassan G. Zadeh (Ghasemzadeh), PhD
Assistant Professor, School of Electrical
Engineering & Computer Science
Washington State University, Pullman, WA

Lorraine Evangelista, PhD, RN, FAHA,
FAAN, Professor,
Sue & Bill Gross School of Nursing
University of California, Irvine, CA

Purpose/Aims: To describe the design and validation of a text message bank that will be used for a mHealth behavioral change intervention -- Fitness Intensive Therapy (*Get FIT+*) to improve healthy eating and enhance physical activity in a sample of older adults (≥ 60 years) at risk for cardiovascular disease.

Background: Short message service (SMS) has been widely used in patient follow-up and disease management, showing improvements in medication adherence, symptom monitoring, appointment attendance and satisfaction with health services. However, most studies usually focus on the effectiveness of SMS and lack information regarding the development and validation of their content to guarantee adequate understanding and appeal of SMS strategies by end users.

Methods: An initial bank of 68 SMS text messages was developed to focus on healthy eating, physical activity and provide motivational feedback through an extant literature review for promoting behavior change to engage in healthy lifestyles. The messages were organized into three subsets [e.g., healthy eating (24 messages), physical activity (24 messages), other goals and compliance (20 messages)] for field validation. An expert panel ($N = 5$) evaluated each subset of SMS text messages. Consistent with the *Get FIT+* project that will utilize the text messages, additional validation was conducted with 5 older adults from diverse ethnic backgrounds representative of the population in Orange County. Two to three people evaluated each of the three SMS text message subsets ($N = 5$, 40% male). User demographics, phone literacy, understanding and appeal of each SMS text message were assessed using a 27-item questionnaire.

Results: The text message content included educational, motivational and goal progress feedback on the topics of nutrition, physical activity and compliance/other goals. Overall, the three SMS datasets received a total of 10 evaluations each. All evaluations—10 out of 10 (100%) valid responses—revealed an adequate understanding of the key idea contained in the SMS text message. The older adults' average appeal score of the three datasets was 9.0 ($SD \pm 0.2$) of 10 points. Participants did not make significant suggestions to change the wording of the messages, but provided excellent and useful feedback to optimize the messaging.

Implications: The final set of SMS text messages produced had very high rates of understanding and appeal among an expert panel and older adults who represented potential recipients. This study highlights the importance of developing and validating a database of simple, feedback-oriented SMS text messages, grounded in evidence and theory, with an expert panel and active engagement of potential end users.

Funding: The authors would like to acknowledge funding from the National Institutes of Health, National Institute of Aging, award # R21AG-53162.

TOPICS IN TECHNOLOGY

Electronic Health Record Instruction: A Comparative Study

Angela Ruckdeschel, PhD, MSN, RN
University of Nevada, Las Vegas
ruckdesc@unlv.nevada.edu

Background: The use of health information technology has been shown to have positive effects on patient outcomes and provider efficiency. More than half of the 7 million life-threatening medication errors that occur each year are made by new nurses and electronic health records (EHRs) have been shown to significantly reduce these errors. This has compelled significant changes in the way nurses practice. They are now expected to enter practice with a solid foundation in health information technology and the ability to employ the electronic health record (EHR).

Unfortunately, the vast majority of nursing schools do not specifically train their students in effective EHR utilization. Academic electronic health records (AEHRs) are electronic health record software packages with learning features that can be incorporated in the classroom, simulation, and skills labs. They have been proposed as one method to enhance EHR competencies, but existing studies have only examined student preferences for their use and their usability with little or no data on actual improvement in quantifiable outcomes.

Purpose: The purpose of this study was to investigate if the use of an academic electronic health record (AEHR) in first-semester nursing students improved self-efficacy, reduced anxiety, and enhanced competence compared to a traditional PowerPoint presentation on EHR usage. Bandura's Social Cognitive Theory was the guiding framework of this study.

Methods: This study used a quasi-experimental design comparing two cohorts of first-semester Bachelor of Science nursing students. The traditional learning (TL) group ($n = 45$) received EHR instruction in a one-hour PowerPoint lecture. The hands on learning (HOL) group ($n = 34$) received a one-hour teaching session using and navigating in an AEHR (Lippincott DocuCare). All students completed pre-instruction surveys on self-efficacy, anxiety, and competency while using an EHR, as well as a demographic information survey. Immediately following the EHR instruction, students completed post-instruction surveys on self-efficacy, anxiety, and competency, as well as an EHR teaching session feedback survey.

Results: All data were analyzed using SPSS 24. Paired t -tests and independent samples t -tests were used. The HOL group demonstrated a statistically significant greater increase in self-efficacy scores ($M = 12.82$, $SD = 10.69$) compared to the TL group ($M = 3.78$, $SD = 5.27$); a statistically significant reduction in anxiety scores ($M = -0.76$, $SD = 0.70$) compared to the TL group ($M = -0.19$, $SD = 0.40$); and a statistically significant greater increase in competency scores ($M = 54.41$, $SD = 11.09$) compared to the TL group ($M = 17.04$, $SD = 10.35$). The change in competency scores between the two instructional groups had the largest effect size ($d = 3.50$), followed by self-efficacy ($d = 1.12$) and anxiety ($d = 1.04$).

Implications: This study provides data supportive of using an AEHR in the nursing curricula. Follow up studies can be used to assess the effect of AEHR based training on factors such as nursing error rates, efficiency and overall satisfaction. Effective and improved technology training in nursing school can bridge the gap between nursing education and the technologically rich healthcare environment.

Abstracts of Podium Presentations

WOMEN'S HEALTH ACROSS THE LIFESPAN

WOMEN'S HEALTH ACROSS THE LIFESPAN

Cardiovascular Health in the Mothers and Wives Caring for Veterans with Traumatic Brain Injury (TBI) or PTSD

*Judy McKeivy, PhD(c), MN, RN
Doctoral Candidate
School of Nursing
University of California
Los Angeles, CA*

Background: Family caregivers are the cornerstone of support for our nation's wounded. While caregiver burden has been studied extensively in caregivers of patients with dementia, stroke, and cancer, little is known about the burden of caregiving in the context of service-related injuries like traumatic brain injury (TBI) and PTSD. Studies have shown that depression, anxiety, and caregiver strain are associated with lifestyle risk factors for coronary heart disease (CHD).

Purpose: The purpose of this descriptive, exploratory study is to examine the effects of caregiving on cardiovascular health in mothers and wives caring for veterans with invisible wounds of war. Aims of the study include: 1) Describe the severity of emotional burden and practical burden in female caregivers of veterans with TBI or PTSD; 2) Evaluate the relationship of caregiver burden to the type of neurobehavioral symptoms (somatic, affective, or cognitive) in veterans; and 3) Explore the relationship of psychobehavioral caregiver variables to cardiovascular health.

Methods: Participants were recruited from two veteran caregiver support groups. They completed an online survey of the following instruments: Neurobehavioral Symptom Inventory, Oberst Caregiver Burden Scale, Involvement Evaluation Questionnaire (IEQ), PHQ8, and GAD7. As 55% of participants did not know their physiological parameters (blood pressure, cholesterol level, and fasting blood sugar), cardiovascular health was measured using a simplified version of the American Heart Association Life Simple Seven (AHA-LSS) that assessed only four components (smoking, BMI, diet, and exercise). Analysis included descriptive and correlational statistics.

Results: The sample (N=20) had a mean age of 39.32 ± 8.64 , were primarily wives (95%), college educated (75%). Half the caregivers reported working outside the home, and/or caring for children under 18. Half of the participants spent ≥ 40 hours per week caring for the veteran. Half of the veterans were diagnosed with both TBI and PTSD. Caregivers reported spending the greatest amount of time providing emotional support for the veteran (95%), managing behavioral problems (80%), performing additional household tasks for the veteran (70%), and monitoring symptoms (65%). Neurobehavioral symptoms in the veteran as reported by the caregiver included forgetfulness (85%), anxiousness (75%), sleep disturbance (70%), and irritability (70%). Emotional burden as measured by the IEQ included spending a great amount of time worrying about the veteran (60%) and needing to supervise the veteran (55%). Many caregivers demonstrated anxiety that would be classified as needing further evaluation (55%) and depressive symptoms consistent with major depression (60%). Veterans' neurobehavioral symptoms were positively correlated with both caregiver physical ($r = .782, p < .001$) and emotional burden ($r = .807, p < .001$). Overall, lower summed scores on for smoking, BMI, diet and exercise items of the AHA-LSS indicated poorer heart health and were correlated with higher scores for depressive symptoms ($r = -.648, p = .002$).

Implications: In preparation for future intervention studies to improve heart health of veterans' caregivers, qualitative data are needed to elucidate fully caregivers' perceptions of barriers and facilitators to heart health self-care.

WOMEN'S HEALTH ACROSS THE LIFESPAN

Screening for Vaginal Sexually Transmitted Diseases in North Haiti

Leah Rashidyan, MSN, CNM, WHNP-BC
Instructor of Clinical Practice
University of Colorado
Anschutz Medical Campus
Aurora, CO

Claudia Amura, PhD, MPH
Research Project Coordinator
College of Nursing
University of Colorado
Anschutz Medical Campus
Aurora, CO

Priscilla Nodine, PhD, CNM, MS
Assistant Professor
College of Nursing
University of Colorado
Anschutz Medical Campus
Aurora, CO

Aim: The aims of this research were to determine prevalence and factors associated with STI risk in non-pregnant Haitian women living in the greater Cap Haitian area; and to investigate the relationship of STIs with symptom-based management.

Background: Sexually transmitted infections (STI) such as Chlamydia trachomatis (CT) and Neisseria gonorrhoeae (NG) have not been as well-studied in Haiti. Several diseases including cervical cancer are highly correlated with STI, and Haiti has one of the highest rates of cervical cancer (> 2 times higher than the US). The current diagnostic and treatment for non-HIV and non-syphilis STIs depend on subjective report of symptoms, warranting the need to study and implement low-technology screening tools.

Methods: Data from non-pregnant women attending a local clinic that offered free health services to the third largest department in Haiti were collected between 9/2015 and April 2016. Data included age; partnership status; age at first sexual contact; number of lifetime partners; and symptoms (increased and malodorous discharge, post-coital bleeding, dyspareunia). Rapid immunochromatographic assays (Artron Laboratory) were used for detecting CT and NG in endocervical swab samples. Diagnosis of either bacterial vaginosis or Trichomonas vaginalis (BV/Trich) was done combining a pH analysis and a “whiff” odor tests to the swabs. The statistical analyses were performed in SPSS version 25. The prevalence of each of the selected STIs is presented as percentage with 95%CI. The p-values were derived from performing Chi square tests, with statistically significances at $\alpha \leq 0.05$.

Results: A total of 870 non-pregnant women visiting the clinic had STI data (mean age 40.4 \pm 10.2). Over half of the participants reported being in partnership (married, 57.6%; concubine, 14.3%). The mean age of first sexual contact was 19.6 (\pm 4.7) and mean average number of sexual partners was 2.3 (\pm 1.8). Lab tests showed subjects were positive for: CT: 36.74% (33.6, 40.0); NG: 8.4% (6.76, 10.51); BV/Trich: 48.4% (45.1, 51.8); and showed a high prevalence of at least one vaginal STI: 70.8% (67.7, 73.8). There were no differences associated across age in our sample for any of the infections. In contrast, across age categories (20-29; 30-39; 40-49; >50), these symptoms showed a statistical significance: increased vaginal discharge (64.0%, 58.8%, 46.1% and 40.7%, $p < 0.01$); dyspareunia (38.6%, 39.2%, 22.9%, 21.5%; $p < 0.01$); and having at least one symptom (76.3%, 72.7%, 57.8%, 54.1%; $p < 0.01$).

Implications: This study shows the feasibility of using rapid lab screening for vaginal bacterial STIs in a low-resource clinic. The lack of a substantial difference in vaginal STI prevalence across age differs from developed countries where standards are in place for early screening and treatment and prevalence is higher in younger women. Haitian women have not been routinely screened for these STIs and may have been infected for years. The results challenge the standard for treatment in Haiti, which is based on symptoms, and underscores the need for low-technology screening as the first-step toward impacting the sexual health of Haitian women.

Funding: This research was funded by Dining for Women.

WOMEN'S HEALTH ACROSS THE LIFESPAN

Hormone Therapy Decision Making in Older Women: Joint Decision Making Best Practice

*Mary M. Hunter, RN, NP, PhD
Adjunct Professor
Department of Physiological Nursing
University of California, San Francisco
San Francisco, CA*

Background and Aims: Use of menopausal hormone therapy (HT) for more than five years puts women at increased risk for breast, ovarian, and endometrial cancer, cardiovascular disease (CVD), gallbladder disease, incontinence, and dementia. For this reason, HT is not recommended beyond this therapeutic window, except in rare circumstances. Nevertheless, data on filled prescriptions indicate that over a third of HT prescriptions are written for women over age 60. These alarming facts raised the research questions: “What factors influence older women to use HT beyond the menopause transition?” and “How do older women weigh the risks and benefits of HT?” These questions called for an inductive research strategy.

Methods: This study employed a constructivist grounded theory methodology and methods. Situational analysis theory and mapping procedures enhanced analysis. Thirty long-term users of systemic HT over age 60 were interviewed individually for an hour. Verbatim transcripts were coded and themes were developed. Rigor was enhanced by reflexive memo writing and advisor consultation regarding development of themes and theory.

Results: Data analysis suggested that these long-term users perceived that HT gave them control of numerous symptoms they attributed to menopause, enabled them to maintain attributes associated with youth and femininity, and helped them avoid diseases associated with aging, such as dementia and CVD. Risk was rarely mentioned in interviews, it was generally disregarded, and nearly all participants were unaware that age and length of HT increase risk for breast cancer. Users were observed to be the primary drivers of long-term HT in this population, although gynecology specialty providers played a major role by giving reassurance about risk and continuing to prescribe HT.

Arguing that the science behind the quantification of HT risk is faulty, some hormone manufacturers aggressively promote HT for long-term use. This promotion is largely directed at gynecology specialists through strategies such as ghostwriting, e.g., journal articles minimizing HT risk that originated with marketing firms are published under the names of prominent physicians. As a consequence, some providers remain skeptical of, and ignore, prescribing guidelines that recommend limiting duration of HT. Interview quotes reflecting marketing messages common in ghost-written articles, which typically cast doubt on WHI findings, illustrate the effectiveness of this strategy.

Implications for Practice: Study findings are applicable to any clinical encounter that involves jointly weighing benefit and risk. Recommendations to providers: learn to distinguish science from marketing, discuss confirmation bias and cite base rates when discussing risk in clinical encounters, and help patients understand that positive feelings about treatment may be based on unrealistic expectations and underestimation of risk. These interventions could potentially strengthen joint decision-making and improve patient outcomes.

WOMEN'S HEALTH ACROSS THE LIFESPAN

Hormone Therapy Decision Making in Older Women: Ghostwriting Is Working

Mary M. Hunter, RN, NP, PhD
Adjunct Professor
Department of Physiological Nursing
University of California, San Francisco
San Francisco, CA

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Funding: This dissertation research was supported by the National Institute of Nursing Research of the National Institutes of Health under Award Number F31NR015170.

WOMEN'S HEALTH ACROSS THE LIFESPAN

The Role of Energy Intake in Metabolic Syndrome: Results from the Women's Health Initiative

Kerryn W. Reding, PhD, MPH, RN, Associate Professor, Biobehavioral Nursing and Health Informatics, University of Washington, Seattle, WA; Mary Pettinger, MS, Senior Biostatistician, Women's Health Initiative, Fred Hutch Cancer Research Center, Seattle, WA; Lesley Tinker, PhD, RD, Senior Staff Scientists, Cancer Prevention, Fred Hutch Cancer Research Center, Seattle, WA; Laura Hayman, PhD, RN, FAAN, Professor, College of Nursing and Health Sciences, University of Massachusetts, Boston, MA; Xiaochen Lin, PhD, Postdoctoral Fellow, Epidemiology, Brown University, Providence, RI; Lauren Hale, PhD, Professor, Family, Population and Preventive Medicine, Stony Brook School of Medicine, Stony Brook, NY; Charles B. Eaton, MD, MS, Professor, Family Medicine and Epidemiology, Brown University Alpert Medical School, Pawtucket, RI; Oleg Zaslavsky, PhD, MHA, RN, Assistant Professor, Biobehavioral Nursing and Health Informatics, University of Washington, Seattle, WA; David Cheng, PhD, Assistant Professor, Roswell Park Comprehensive Cancer Center, Buffalo, NY; Simin Liu, MD, ScD, Professor, Epidemiology, Brown University, Providence, RI; Ashley Scherman, PhD, Postdoctoral Fellow, Biobehavioral Nursing and Health Informatics, University of Washington, Seattle, WA; Wendy E. Barrington, PhD, MPH, Assistant Professor, Psychosocial and Community Health, University of Washington, Seattle, WA; Jill Peltzer, PhD, APRN-CNS, Assistant Professor, School of Nursing, University of Kansas, Kansas City, MO; Di Wang, MPH, Doctoral Student, Biobehavioral Nursing and Health Informatics, University of Washington, Seattle, WA; Marian L. Neuhouser, PhD, RD, Full Member, Cancer Prevention, Fred Hutch Cancer Research Center, Seattle, WA

Purpose: To examine associations between energy intake and metabolic syndrome (MetS).

Background: MetS is a cluster of biological indicators of adverse metabolic health and a strong predictor of diabetes and cardiovascular disease (CVD). MetS is associated with increased mortality independent of body mass index (BMI). The discordance of metabolic health (i.e., the absence of MetS) and high BMI (obesity = BMI >30kg/m²) can be substantial; there are metabolically healthy obese (MHO) individuals and metabolically unhealthy-normal weight (MUH-NW) individuals. Multiple studies of dietary intake and characteristics of MHO and MUH-NW individuals have reported mixed results due, in part, to the limitations of self-reported dietary intake.

Methods: This analysis was conducted in participants from the Women's Health Initiative (WHI) study who had food frequency questionnaires (FFQ) completed at baseline and components of metabolic syndrome measured at year 3 (n=5375). Within the WHI, dietary energy and protein measures were calibrated for systematic measurement error by linear equations that used doubly-labeled water and urinary nitrogen as objective biomarkers of total energy expenditure and protein intake, which approximate total energy and protein consumption in weight stable people. MetS was defined using ATPIII criteria of having ≥ 3 of the following 5 components: elevated triglycerides (≥ 150 mg/dL), low HDL cholesterol (< 50 mg/dL), hypertension (systolic BP ≥ 130 or diastolic BP ≥ 85), and elevated serum glucose (>100 mg/dL). We estimated the odds of MetS in relation to biomarker-calibrated energy intake (kcal/day) and biomarker-calibrated protein intake (g/day) using logistic regression models adjusted for confounders including age, race, education, recreational physical activity, income, smoking status, history of treated diabetes, history of treated hypertension, and parity.

Results: We observed that for every 20% increase in energy intake, women were at a 2.17-fold elevated risk of MetS (95% Confidence Interval [CI]: 1.63-2.88); for a 20% incremental increase in protein intake they were at a 1.65-fold elevated risk of MetS (95% CI: 1.19-2.28). Percent energy from protein was not associated with risk of MetS. We further investigated the individual components of MetS, observing that elevated calibrated energy intake and protein intake were associated with increased risk of elevated blood glucose (OR=3.19 [95%CI: 2.32-4.38]; OR 2.29 [95% CI: 1.53-3.42], respectively), low HDL cholesterol (OR=2.05 [95%CI: 1.57-2.68]; OR 1.72 [95% CI: 1.29-2.30], respectively), and elevated triglycerides (OR=1.56 [95%CI: 1.23-1.97]; OR 1.43 [95% CI: 1.14-1.81], respectively), but was not associated with hypertension. Finally, we investigated the role of calibrated energy and protein intakes on metabolic health stratified by BMI. Among normal weight women, for every 20% increase in energy intake, the risk of MetS increased 3.2-fold (95% CI: 1.08-9.22). Among obese women, the risk of metS increased 1.6-fold for every 20% increase in energy intake compared to MHO women (95% CI: 1-15-2.13).

Implications: We found that increased calorie consumption is strongly associated with MetS both among normal weight and obese women. These findings are important in clinical care where normal weight and obese women may be provided different advice regarding health promotion strategies and risk of diabetes and CVD.

Funding: The WHI program is funded by the National Heart, Lung, and Blood Institute, National Institutes of Health, U.S. Department of Health and Human Services through contracts HHSN268201600018C, HHSN268201600001C, HSN268201600002C, HHSN268201600003C, and HHSN268201600004C.

Abstracts of Poster Presentations

ACUTE CARE NURSING

ACUTE CARE NURSING

Balancing Nurse Religiosity and Patient-Centered Care in Secular Acute Care Settings

Trudee Murray, RN, BSN
CCRN- Pediatrics, MS Student
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA

Elena O. Siegel, PhD, RN
Associate Professor
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA

Jann Murray-García, MD, MPH
Assistant Health Sciences Clinical Professor
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA

Elizabeth Johnston Taylor, PhD, RN
Professor
School of Nursing
Loma Linda University
Loma Linda, CA

Purpose: The purpose of this pilot study was to explore the strategies religious nurses use to balance their own inherent religiosity while providing patient-centered care, including any need for personal coping and any potential or actual tension that may result.

Background: Religious beliefs, values, and practices can be important personal resources for some nurses, acting as a motivating factor and coping mechanism in reducing burnout. However, literature suggests the potential for tension between nurse religiosity and providing patient-centered care, with some studies revealing nurses feel they need to separate their religious and professional selves at work, and other studies suggesting overt forms of proselytization with patients. Additionally, studies suggest difficulty for some nurses with withdrawal/withholding patient care when this choice differs from their own personal religious beliefs. As some variability has been noted between secular and faith-based settings, and hospitals demonstrating a higher rate of burnout than other healthcare settings, this study focused on nurses with experience in secular acute care settings.

Method: Using a descriptive qualitative approach, semi-structured interviews were conducted with a convenience sample of five registered nurses (n=5) who self-described as religious and had worked in a secular acute care setting for at least one year. The interviews were audiotaped and lasted about one hour each. Interviews were transcribed verbatim and analyzed- using thematic analysis for common themes and patterns. Elements of trustworthiness during interview data collection and analysis were incorporated.

Results: Participants described caring for patients with similar and differing values and beliefs as well as their personal religiosity and its use as a coping mechanism and motivating factor in the workplace. Interviews are still in the process of being analyzed, but it appears that one emerging theme is a nurse's use of a higher or more important personal religious belief to overcome another when it conflicts with or opposes a patient's beliefs, values, lifestyle, or healthcare choice. In using this approach, nurses can feel re-centered on the patient while still feeling connected to their religious self.

Implications: Understanding how nurses work to overcome potential or actual tension between their religiosity and providing patient-centered care, will aid nurses and administrators alike in approaching this aspect of diversity within the workplace. This is especially pertinent in an age where higher importance is being placed on providing care that reflects the patient's beliefs, values, and preferences in a sensitive manner. Findings can also be used within the nurse education environment in preparing nurses to provide this type of care by first acknowledging their own belief system, and then learning about techniques that can aid them in balancing theirs with that of a patient's.

ACUTE CARE NURSING

Horizontal Violence among Registered Nurses: Implications for Patient Safety

*Ann Rocha, PhD, RN, CNS-BC, FNP-BC
Assistant Professor
Annie Taylor Dee School of Nursing
Dumke College of Health Professions
Weber State University
Ogden, UT*

Purposes/Aims: Determine the relationship between horizontal violence among unit-based registered nurses and the number of unit-based falls with and without injury. Aims included the level of horizontal violence among registered nurses and the relationship between horizontal violence and falls.

Background: Horizontal violence is a manifestation of oppressed group behavior leading to low self-esteem and feelings of worthlessness among nurses. Horizontal violence leads to the creation of a hostile, unsafe work environment preventing nurses from performing at their highest potentials. A hostile work environment leads to a culture of unsafe patient care that may result in increased harm to patients.

Methodology: This was a correlation descriptive study of the relationship between nurses' responses to an online questionnaire regarding prevalence of horizontal violence and NDNQI data submission of the number of unit falls, with and without injury. Data was analyzed and correlated at the individual and group levels.

Results: A majority of the responses to the survey on prevalence of horizontal violence among registered nurses indicated exposure to at least one of these behaviors. Only 42 out of 168 respondents (25%) gave the response "never" to all for items. At least one horizontal violence behavior was experienced by 126 out of 168 respondents (75%) over a six-month period. No statistical significance was obtained regarding the relationship between prevalence of horizontal violence among registered nurses and falls.

Clinical Implications: Undesirable patient outcomes have been shown in the literature to result from care provided in an environment of poor communication and lack of teamwork. In the presence of increased numbers of poor patient outcomes, it is strongly recommended that the work environment be assessed for the presence of horizontal violence.

ACUTE CARE NURSING

Implementation of a Mobility Protocol on a Medical-Surgical Unit

*Rebecca Sandoval, MSN, MBA, RN
Southern California CSU Doctor of Nursing Practice Consortium
California State University, Long Beach
Long Beach, CA*

*Beth R. Keely, PhD, RN
Professor, CSU DNP Consortium
California State University, Long Beach
Long Beach, CA*

*Cathleen Deckers, EdD., RN, CHSE
Assistant Professor, CSU DNP Consortium
California State University, Long Beach
Long Beach, CA*

Purpose/Aims: The purpose of this DNP project is to adapt, implement, and evaluate an evidence-based mobility protocol on a medical-surgical unit at a hospital in Southern California to reduce the number of falls among older adult patients.

Rationale Background: Falls among older adult patients in the hospital setting are a critical issue. In the project hospital, the number of older adult patient falls increased over the last three years. In 2015, among older adults the hospital had a fall rate of 0.33 per 1000 patient days (55 falls) which increased to a rate of 0.53 per 1000 patient days (90 falls) in 2016. The current fall rate among older adult patients is 0.63 per 1000 patient days (109 falls). Existing evidence shows that mobilization of patients prevents functional decline and muscle loss. One fall prevention strategy is to promote early mobilization. Mobility protocols increase patients' range of motion activities and early ambulation. A nursing mobility protocol can assist nursing staff to implement early, and continuous mobility interventions based on the patients assessed functional status.

A Brief Description of the Undertaking/Best Practice Including the Approach, Methods or Process Used: This performance improvement project includes conducting surveys of registered nurses' and nursing attendants' perceptions regarding fall prevention and promotion of early mobility. In collaboration with the hospital's education and physical therapy departments and current best practices, an early mobility protocol was adapted from the existing hospital protocol. Staff members were educated and trained on the protocol before implementation. Data analysis will consist of the evaluation of existing data and survey results before and after the implementation of the mobility protocol. The data will be analyzed from the hospital's existing aggregated reports. The data include fall rates, the length of hospital stay, physical therapy referrals, and mobility activities.

Outcomes Achieved/Documented: In progress; data will be available at the conference.

Conclusion, Emphasizing Implications for Clinical or Educational Practices and Recommendations for Research of Future Undertakings: This project has implications to improve clinical practice by early mobilization. Nursing surveys results and pre-post data, along with current evidence, is expected to improve nursing practice through the implementation of a nursing mobility protocol. This protocol may decrease the fall rates and increase patient mobility in older adults in the hospital setting.

ACUTE CARE NURSING

Evaluating Bundle Adherence in Ventilated Patients: A Quality Improvement Project

Melanie Webb, RN, CCRN, DNP Student
Dr. Lindsay Iverson, DNP, APRN, ACNP-BC, Faculty Advisor
Creighton University
Omaha, NE
mwe50409@creighton.edu

Background: Complications of mechanical ventilation preclude a restoration of health that is being increasingly measured by quality of life, morbidity, functional status, and costs of continued care. Despite evidence-driven protocolized care bundles that aim to optimize management and reduce complications in ventilated patients, routine adherence to the ABCDE bundle for the management of pain, agitation, and delirium in ventilated patients is inconsistent.

Purpose: The purpose of this quality improvement project is to evaluate patterns of sedation and analgesia management and coordinated ventilator weaning in critically ill adult patients. The data will be analyzed to inform the development and implementation of targeted educational intervention that synergizes nursing, respiratory therapy and medical disciplines within the organization, with subsequent reevaluation.

Methods: The project will include a comparison group and an intervention group. A retrospective chart review will be undertaken to identify specific aspects of bundle adherence in the comparison group, which will be comprised of adult patients that have orders to undergo ventilator weaning. Specific measures of evaluation will include: Sedation scoring and titration, pain scoring and treatment, rates of spontaneous awaking trials, coordinated weaning trials, and adequacy of analgesia during weaning trials. A statistical analysis of the data will inform the refinement of an educational module that will be rendered to nursing and respiratory staff. A subsequent reevaluation of identical data in adult ventilated patients with identical inclusion/exclusion criteria will be gathered 2-4 weeks after the education intervention to assess for improvement in adherence to written orders.

Results: Project implementation is currently in progress; however, it is anticipated that the results will illuminate the status of order adherence, and specifically give rise to deficits that require intervention.

Recommendations: While this is a unique QI project, ABCDE bundle adherence has been shown to be inconsistent for many critical care entities. This project is hoped to inform strategic recommendations that are applicable to all critical care nurses.

ACUTE CARE NURSING

Improving Nurses' Identification of Sepsis in the Hospitalized Elderly

*Aldrin Nieves, DNP, MSN, RN
Doctor of Nursing Practice Graduate
College of Nursing and Health Care Professions
Grand Canyon University
Phoenix, AZ*

The purpose of this project was to determine whether an evidence-based educational intervention for staff registered nurses (RNs) would lead to an increase in the accuracy of sepsis screenings performed on the elderly patients at the acute care for the elderly (ACE) unit of a Northern California hospital. There has been an alarming increase in inpatient hospitalizations due to sepsis in recent years, and the elderly are more likely than their younger counterparts to develop sepsis and die from its complications. Early diagnosis and treatment of sepsis are particularly challenging among the elderly due to their atypical clinical presentations of infection. The Surviving Sepsis Campaign's (SSC) sepsis screening tool is widely used in hospitals in the United States to detect the presence of sepsis. This screening tool was already in use at the participating organization. However, it was unknown whether an evidence-based educational intervention for staff RNs would increase the accuracy in the use of this sepsis screening tool. Sepsis screening data was collected from 34 RNs both before and after the evidence-based educational intervention. The educational intervention was in the form of a PowerPoint presentation attended by the 34 RNs. The following topics were covered in the presentation: sepsis epidemiology, hospital sepsis data, sepsis pathophysiology, sepsis clinical manifestations in the elderly, and sepsis treatment and management. A sepsis case study followed the presentation. The contents of the educational intervention were derived from current evidence-based literature on sepsis. To assess whether there were significant differences in the RNs' pre- and post-intervention sepsis screening scores, a dependent samples *t*-test was performed. The results showed that the educational intervention was effective in increasing the accuracy of sepsis screenings performed on the elderly patients at the ACE unit of this Northern California hospital, with a 22.06% increase in accuracy ($p = .007$). Elderly patients who are screened accurately are more likely to be diagnosed and treated promptly, thereby increasing their chance of survival and quality of life. The success of the educational intervention in increasing the accuracy of sepsis screenings could potentially lead to an overall improvement in the outcomes of sepsis care for these patients, along with the potential to improve overall compliance to the sepsis bundles established by the SSC guidelines. Future investigations should focus on creating similar interventions to implement in other organizations. In addition, developing an intervention that includes simulation as part of the sepsis education could provide a valuable learning experience for RNs because it would provide them with an opportunity to practice sepsis screening using real clinical scenarios. Lastly, creating a clear and evidence-based sepsis screening tool specifically geared towards the elderly population could also have the potential to improve clinical outcomes for elderly patients with sepsis.

ACUTE CARE NURSING

Integration of the NICOM into the Management of Septic Patients

*Elaine Lim Talley, MS, RN
Quality Nurse Consultant
Kaiser Permanente
Oakland, CA*

Background: Sepsis management requires ongoing hemodynamic monitoring in the effort to maintain critical tissue perfusion. Although the Non-Invasive Cardiac Output Monitor (NICOM) is considered an aid to clinician assessment of patients' hemodynamic status, the application of NICOM use in sepsis management in clinical practice is scarce in the literature.

Purpose: The purpose of this quality improvement project was to examine the clinical application of the NICOM in critically ill septic patients and explore variations in outcomes between patients who received care with NICOM and patients with usual care (UC).

Methods: This study involved a retrospective secondary analysis of electronic health records retrieved from the clinical data repository along with manual chart review. This included adult patients (>17 years old) who were admitted to intensive care units (ICU) between July 1, 2016 and June 30, 2017 and had a diagnosis of sepsis, severe sepsis, or septic shock together with serum lactate levels. Descriptive and bivariate statistical analyses were performed, including chi-square, Fisher's exact, and independent *t*-tests.

Results: Of the 205 sepsis patients included, there were 131 UC patients and 74 NICOM patients. There was no difference in demographics or comorbidities between the two groups, with the exception of a higher prevalence of hyperlipidemia and a more advanced age (67.1 ± 13.4 versus 61.6 ± 17.4 years) in the NICOM group. Overall the NICOM group was sicker according to the Acute Physiology And Chronic Health Evaluation (APACHE) IVa scores and initial/peak lactate levels, and stayed longer in the ICU ($p < .01$) along with the higher incidence of vasopressor and mechanical ventilator use ($p < .001$). Importantly, there was no difference in length of hospital stay and discharge disposition between the two groups according to bivariate analysis.

Conclusions: Interpretations of findings require caution due to the nature of retrospective secondary data analysis of existing records and statistical methods adopted. However, potential benefits of NICOM use were suggested as this NICOM group, who displayed a higher incidence of severe sepsis, presented variations in patient outcomes similar to those of the usual care group. Multivariate analysis is required to examine any association between the NICOM use and improved patient outcomes while controlling confounding variables.

ACUTE CARE NURSING

Delivery of the ABCDE Bundle in Critically Ill Adults Requiring Mechanical Ventilation

*Jacqueline De Mellow, PhD, RN, CCNS
Sepsis Coordinator/Quality Facilitator, Critical Care
Dignity Health St. Joseph's Medical Center, Stockton, CA*

*Christiane Drake, PhD
Department of Statistics
University of California, Davis
Davis, CA*

*Patrick S. Romano, MD, MPH, FACP, FAAP
School of Medicine and Center for Healthcare
Policy and Research, UC Davis
Sacramento, CA*

*Michele C. Balas, PhD, RN, CCRN-K,
FCCM, FAAN
Ohio State University College of Nursing
Columbus, OH*

*Tae Youn Kim, PhD, RN
Associate Professor, Betty Irene Moore School
of Nursing, UC Davis
Sacramento, CA*

Background: Patients requiring mechanical ventilation (MV) are at higher risk for developing health care associated infections and post intensive care syndrome with debilitating functional, cognitive and mental health problems that can last years after critical illness. The ABCDEF bundle (Assess, prevent, and manage pain, Both, spontaneous awakening and breathing trials, Choice of sedation/analgesia, Delirium assess, prevent and manage, Early mobility/exercise, and Family engagement/empowerment) delivered by the care team is safe and effective in reducing hospital mortality, duration of MV, and incidence of delirium. While previous studies have evaluated both the care teams' compliance with the bundle elements and their impact on patient outcomes, little research has been conducted in community hospitals evaluating the delivery of bundle interventions in MV patients.

Purpose: This study was designed to examine the care teams' performance of the ABCDE bundle in MV patients for the first 96 hours over a six-month period in seven community hospitals of a large western health system.

Methods: A retrospective observational study design was employed using existing electronic health record (EHR) data collected from the seven hospitals. The sample included adult patients who were on MV for greater than 24 hours admitted to one of 15 ICUs between August 2016 to January 2017, excluding individuals who were on comfort care or comatose. The care teams' performance was computed as the proportion of overall or individual bundle elements provided to eligible patients in each day during the first 96 hours of MV. Repeated measure analysis was used to detect factors associated with differences in the performance over the first four days on MV.

Results: Of 977 adult patients, the majority were White (73.3%), non-Hispanic (79.8%), admitted from home (90.1%), and overweight with a median BMI of 27.4 (range: 11.1-70.7). Mean overall performance by the care team was $66 \pm 14\%$ for the first 96 hours of MV. These performance scores varied from a high of 71% (± 15) to a low of 62% (± 15) across the sites ($p < .0001$). On average, individual element performance by the care teams was high for sedation and pain ($93 \pm 16\%$), awakening ($81 \pm 35\%$) and breathing trials ($73 \pm 36\%$), while relatively lower for delirium and mobility ($44 \pm 35\%$). In repeated measure analysis sedation duration was associated with variation in overall performance by day ($p = .001$). The overall performance of the care teams over the first four days, was highest when MV patients were not on sedation.

Implications: While the modest levels of bundle performance presents room for improvement across the sites, our findings show that the implementation of the ABCDE bundle is feasible in community hospitals with limited resources. Importantly, delirium and mobility assessments could be further enhanced with re-enforcement with the care team as they may be less familiar with these assessments for MV patients. Also, eliminating unnecessary sedation in MV patients would improve performance of the bundle by the care team. Future studies are needed to explore contextual factors affecting care teams' performance over time across care settings.

ACUTE CARE NURSING

Nurses' Assessment of Delirium Risk Factors Using Analytic Hierarchy Process (AHP)

Ozge Zeki

PhD Candidate

*Koc University, Institute of Health Sciences
Istanbul, Turkey*

Perihan Guner, PhD

Professor

*Koc University, School of Nursing
Istanbul, Turkey*

Mustafa Ozkaynak, PhD

Assistant Professor

*Univ. of Colorado, College of Nursing
Aurora, CO*

Aim: Analytical hierarchy process (AHP) was used to determine the priorities of nurses in assessment of delirium risk factors.

Background: Delirium is a complicated syndrome caused by multiple factors and presents with the distortion in attention, consciousness, perception and sleep-wake cycle of patients. Delirium has been reported to occur in 50-79% of intensive care unit (ICU) patients at a high cost to the patient and caregivers. Delirium is reported to extend duration on mechanical ventilation by 2 days, ICU stays by 4, and post-ICU-stays by 10 days. It is therefore a high priority for practitioners and researchers to be aware of the risk factors of delirium and to take timely preclusive measures in preventing and reducing its negative consequences.

Methods: Delirium risk factors were reviewed and a comprehensive list was prepared. The risk factors were organized by dividing them into smaller groups and subgroups of similar factors. The organized list was then presented to the expert panel to further improve the list. This was used to create the AHP questionnaire, consisting of 178 items comparing the importance of two delirium risk factors one with respect to another. The AHP questionnaire was then transformed to an online cloud environment to obtain the opinions of nurses from units within 5 hospitals in Turkey. The initial, one-on-one interviews of 50 nurses took about 40 minutes. Results were collected and evaluated using a MATLAB script. Participants were also given a demographic survey, consisting of 23 questions.

Results: Manually and online data provided insight about preferences of nurses on delirium. For each individual, AHP results provided a weighted list of the risk factors. Since the weight assigned to each risk factor reflects the significance of the corresponding risk factor for a given individual, the weight-sorted list provided the most important risk factors for a given individual. Our preliminary data shows that the consistency ratios (CR), remained within the acceptable range ($CR < 0.1$). The list also showed differences on the factors associated with educational level, experience etc.

Implications: Quantification of risk factors using AHP identified those important to nurses. This provides the insight towards the possible roles of education, experience on the nurses' view of the delirium risk factors. In particular, calculation of weighted averages could be made that took into account other details such as average number of encountered delirium patients, duration of ICU experience etc. Initial results reveal that the departmental segmentation of the results, gives the highest correlation in terms of nurses' evaluation of the delirium risk factors.

ACUTE CARE NURSING

Implementation of an Oral Care Protocol to Prevent Hospital Acquired Pneumonia in Geriatric Patients

Lanaya Davis, BSN, RN

DNP, FNP Student

*University of Maryland Baltimore, School of Nursing
Baltimore, MD*

Purpose: The purpose of this quality improvement project is to develop and implement the use of an oral care protocol on an acute geriatric inpatient unit in order to decrease HAP incidences. Short-term goals of this project include: implementation of an oral care protocol by September 2018, by November 2018, 50% of patients at risk for aspiration will have documented oral care, and by September 2018, staff knowledge of HAP will be increased by 50% through the use of education and posttests. Long-term goals of this project include: reduction of overall aspiration pneumonia by 90%.

Rationale/Conceptual Basis/Background: Hospital acquired pneumonia (HAP) is the second most common hospital acquired infection, and is responsible for 20-33% of mortality rates from infection. Patients with HAP also have higher 30-day hospital readmission rates compared to patients without a hospital acquired infection. Nationwide, HAP accounts for 32.5-35.4 million discharges annually. According to the Centers for Disease Control, 5-7% of hospitalizations due to pneumonia end in death. The oral cavity is a high reservoir for infection, and evidence based practice suggests oral hygiene interventions to prevent HAP. HAP is more common in at risk individuals, and there are four routes of transmission: (1) through aspiration of oral contents (food, oropharyngeal secretions, or gastrointestinal contents), (2) from infectious sites, (3), from inhalation of aerosols that are infected, and (4) from extra-pulmonary sites. Aspiration of infectious organisms remains the number one way to acquire HAP, so reducing oral bacteria is critical in HAP prevention.

Methods: This project took place over a 14 week time span. Education sessions was provided to staff to ensure appropriate use of oral care equipment. A five question pre and post education test was administered to measure retention of information. Staff documented each time oral care was performed, and they also documented all of the supplies that were used.

Results: Oral care compliance will be measured through point prevalence, and HAP incidences will be tracked through manual extraction of infection data. HAP percentages will be calculated using the number of HAP incidences divided by the number of patient visits.

Implications for Translation to Practice/Further Research: The results of this project can help establish a standardized protocol to prevent HAP in elderly patients being treated in a hospital setting. Effective implementation of this protocol could potentially decrease the number of cases of HAP in a hospital setting which in turn decreases the overall costs spent to treat this diagnosis.

ACUTE CARE NURSING

“Psych” It up for Falls: Development of an Inpatient Behavioral Fall Prevention Bundle

Stephanie Rose Gaudiello Peer, BSN, RN-BC, Nursing
Figaro L. Loresto, PhD, RN, Nursing Education and Research

Denver Health
Denver, CO

Purpose: Describe the development of an inpatient behavioral health fall prevention bundle and assess the behavior of fall rates prior to the development and during the development of the fall prevention bundle.

Background: Fall prevention in healthcare as specifically applied to acute inpatient mental health settings represent a critical element in the prevention of injury during hospital stays. Preventing falls in acute inpatient psychiatric patients is exacerbated by factors unique to the population such as psychotropic medications (i.e. culprit drugs), increased mobility, behavioral factors related to psychiatric diagnosis, delirium, dementia, and Alzheimer’s in the elderly. Further complicating factors related to fall risks are environmental: lack of proper mobility equipment, lack of proper transfer devices, insufficient fall education and interventions, and an inadequate fall scale to correctly identify and safeguard those fallers who are high risk. An inpatient behavioral health fall team sought to develop an effective falls initiative for the psychiatric population utilizing literature reviews and behavioral falls data.

Methods: The development of the behavioral health falls bundle began in August 2017 with a trial of a new risk tool and an evaluation of the current utilize tool. This trial increased the awareness of the importance of falls among the staff. Further, a journal club was started one month later to further discuss available evidence from research article regarding effective interventions. Since then, the behavioral fall team collaborated with staff nurses, nursing students, occupational therapists, pharmacists, and providers to develop a fall prevention standard work. During this process, falls per 1000 patient days was assessed from January 2017 to August 2018. A comparison of falls per 1000 patient days was from a time period before the development of the fall intervention to a time period after the development of the fall intervention utilizing bivariate statistical analysis.

Results: The behavioral health falls team was able to create a falls bundle that incorporated a new risk tool that is specific to the psychiatric population. Interventions included occupational therapist evaluation for high-risk patients, a medication review for high-risk patients on antipsychotics, and “Tumble Tuesday”, a report out to physicians during bed meeting regarding falls that occurred a week prior. Assessing the fall rates prior to the development and during the development of the falls bundle, there was a decrease in total falls per 1000 patient days (5.97 vs. 4.56) and injury falls per 1000 patient days (2.06 vs. 1.31). These results were not significant.

Implications/Conclusions: Utilizing falls literature and falls data, the behavioral health falls team was able to develop a falls bundle with potential to reduce falls within the inpatient behavioral unit. Further, this increased awareness around the work of falls contributed to the decrease in total and injury falls per 1000 patient days. More work is needed in order to assess the effectiveness of this falls bundle.

ACUTE CARE NURSING

Staff Perception of a Management Protocol for the Hospitalized Substance Misuser

*Gale Springer, MSN, PMHCNS-BC, Psychiatric ARNP
Mental Health Clinical Nurse Specialist
Mental Health Services
Providence Regional Medical Center Everett
Everett, WA*

*Mary Jo Sarver, ARNP, AOCN, CRNI, VA-BC, LNC
Oncology Clinical Nurse Specialist
Oncology Services
Providence Regional Medical Center Everett
Everett, WA*

Purpose/Aim: The purpose of this project was to establish a safe protocol for care of the hospitalized substance misuser along with helping nursing staff maintain a respectful, non-judgmental and collaborative attitude toward this vulnerable group of patients.

Rationale/Background: There is rampant abuse of heroin and other illicit drugs in communities across the nation. People struggling with addiction often have compromising medical issues such as endocarditis, osteomyelitis, cellulitis and abscesses related to their use requiring weeks to months of hospitalization. Nurses have a difficult time providing safe, consistent care of the substance misuser in an acute care medical/surgical setting. Some of these patients have even used illicit substances during their hospital stay that were brought in by family or friends. This has created a dangerous situation for the patient and immense distress for the nurses.

Methods: In order to enhance care for the patient with a substance misuse history we have developed a protocol for such patients who are hospitalized on an acute care medical/surgical unit. This protocol is based on a bundle of interventions often considered standardized care on chemical dependency units. The protocol included informing patients in advance of a written substance misuse partnership agreement, searching belongings, monitoring visitors and restricting visitation when needed. Patients are given opiates in liquid form, daily Chlorhexidine baths, and are restricted from access to hospital syringes. The protocol also included the use of alcohol infused caps with tamper resistant labels to protect the patients' PICC lines.

Outcomes: Data was collected on a convenience sample of 64 patients over six months in a general medical/surgical unit which cohorts many of the substance misuse population. Nurses found the substance misuse agreement easy to read (96%), believed the protocol improved the safety of the patient (99%) and helped staff be more matter-of-fact and nonjudgmental (87%). There were no CLABSI during the data gathering period. Approximately 17 % of patients showed some evidence of tampering with the label as compared to the against medical advice (AMA) rate of 25 %.

Conclusions: Data showed that staff were highly satisfied with the substance misuse care protocol and believe it to be helpful and easy to use. Though there was some suspected label tampering, there were no CLABSI which can be indicative of patients using their PICC lines to inject drugs. Future interventions should focus on how to decrease the higher-than-anticipated AMA rates.

ACUTE CARE NURSING

Improving Awareness: Assessing the Effectiveness of Unit Champion Audits on Falls

*Figaro L. Loresto Jr., PhD, RN
Nurse Quality Research Specialist
Nursing Education and Research Department
Denver Health
Denver, CO*

*Casey Grant, BSN, RN
Registered Nurse
Department of Nursing
Denver Health
Denver, CO*

*Jaime Solberg, BSN, RN
Registered Nurse
Department of Nursing
Denver Health
Denver, CO*

*Kathryn Eron, BA
Research Assistant
Nursing Education and Research Department
Denver, CO*

Purposes/Aims: To assess the effectiveness of Fall Champion Audits (FCA) in reducing hospitalized patient fall rates within a medical-oncology unit.

Rational/Background: Inpatient falls remain a major challenge for hospital staff. Repercussions of falls include patient injury and increased hospital expense. One hospital in the central United States has an active Fall Champions committee who develop fall prevention initiatives. One initiative is the FCA, an audit completed by Fall Champions that assesses fall risk, interventions, and barriers among staff and patients.

Methods: FCAs were piloted in a medical-oncology unit. A fall champion utilizing a standard audit form asked specific fall related questions to the charge nurse, staff nurse, certified nurse assistant or clerk, and patient. These questions address fall risk, fall interventions, and fall barriers. Further, FCA's enable opportunity for the fall champion to educate and to address in any barriers to fall prevention. An interrupted time-series design was used to assess the effectiveness of the tool in reducing fall rates. First, a bivariate analysis was conducted to compare fall rates prior to and after FCA implementation. Segmented regression analyses were done to assess the effect of the FCA adjusting for baseline levels, trends, and fall initiatives.

Results: Bivariate analysis suggested a significant decrease in falls per 1000 patient days from pre-implementation (3.75) to post-implementation (1.62). SRA results suggested that FCAs contributed to the sustainability of concurrently implemented fall initiatives within the acute care division.

Conclusions: FCAs are a feasible intervention in reducing fall rates. The intervention provides opportunity for staff to take ownership in fall prevention.

ACUTE CARE NURSING

Organizational Learning during a Significant Hospital Transition

Bret Lyman, PhD, RN, Assistant Professor
Daphne Thomas, MSN, RN, Assistant Professor
Emily Hammond, Baccalaureate Nursing Student
Margaret Gunn, Baccalaureate Nursing Student
Kylie Thorum, Baccalaureate Nursing Student

College of Nursing
Brigham Young University
Provo, UT

Purposes/Aims: To explore the relationship between contextual factors associated with organizational learning and patient outcomes throughout a significant hospital transition.

Rationale/Conceptual Basis/Background: Hospitals operate in a complex environment, characterized by constant change. Fostering organizational learning in hospitals may be an effective strategy nurse leaders can use to ensure excellent patient care is sustained in spite of significant change. Organizational learning is “a process of positive change in an organization’s collective knowledge, cognition, and actions, which enhances the organization’s ability to achieve its desired outcomes”. Outcomes positively correlated with organizational learning include better patient care and patient experience. A recent realist review of the literature indicates organizational learning in hospitals occurs when certain contextual factors are present, including, a shared purpose, motivation, psychologically safe relationships, adequate infrastructure, leadership, and shared experiences among staff. Therefore, it is anticipated that the presence of these contextual factors correlates with better performance during organizational change. However, this relationship remains largely unexplored.

Methods: A quantitative longitudinal cohort design will be used to study four hospital units throughout a significant, scheduled, organizational change. For these four hospital units, the change involves moving to a newly constructed hospital building, where nurses will experience a substantially different unit layout and will care for patients with increased acuity. Contextual factors will be measured using a survey, administered to nurses on participating units 1-2 months prior to the transition, 2-3 months after the transition, 6 months after, and 12 months after. Nurses will use the instrument to rate the degree to which the six contextual factors are present on their hospital unit. Outcomes collected will include unit-level nurse-sensitive outcomes measures and patient satisfaction data. Other data collected will include: nursing hours per patient day, skill mix, nurse education levels, nurse turnover, and RN job satisfaction. In addition to descriptive statistics, mixed modeling will be used to explore the relationship between the contextual factors associated with organizational learning and patient care throughout a significant hospital transition.

Results: Results are pending.

Implications for Translation to Practice/Further Research: Longitudinal research on hospital transitions can offer important insights into the relationship between these contextual factors and hospital performance during significant change. Such insights may help nurse leaders as they help hospitals prepare for and navigate change while ensuring patients consistently receive excellent care.

ACUTE CARE NURSING

Integrative Treatment of Postoperative Nausea and Vomiting: A Best Practice Approach

Morgan Postal
BSN Honors Student

Cheryl Lacasse, PhD, RN, AOCNS
Clinical Professor

College of Nursing
University of Arizona
Tucson, AZ

Purposes/Aims: The purpose of this literature review was to create best practice recommendations to better treat postoperative nausea and vomiting (PONV) during the first 24 postoperative hours in patients undergoing general anesthesia with an integrative nursing approach.

Rationale/Background: PONV is a multifaceted and unpleasant phenomenon that many patients face, increasing length and cost of stay with an increased use of supplies and staff time. The modality most often used to treat PONV is pharmacotherapy though it may not be the most cost-effective intervention nor the preference of the patient. By using interventions moving from least to most invasive, nurses are able to practice integrative nursing and enhance not only the health but the well-being of their patients.

Methods: The literature review was conducted through CINAHL, Embase and PubMed. The keywords used to search for articles were PONV and postoperative nausea and vomiting. Subheadings searched for included aromatherapy, P6 acupuncture, acupuncture, supplemental oxygen, oxygen, supplemental fluid therapy, intravenous fluid therapy, pharmacotherapy, ondansetron, and 5HT₃ antagonists. Dates of publication were limited to the years between 2013 and 2018 and were expanded to 2008 to 2018 if necessary to yield full text publications of high quality or of rigorous design. The search was limited to scholarly research articles published in English in peer reviewed journals. The initial search yielded 1060 articles. Articles chosen for review focused on integration of both complementary non-pharmacological and pharmacologic interventions to manage PONV. Fifty article abstracts were screened by the author and 27 were chosen for full review.

Results: Twenty-seven articles were chosen for the literature review including three quasi-experimental studies, 12 randomized controlled trials and 12 systematic reviews.

The literature review provided information on some of the most promising nursing interventions available to manage and treat PONV. The literature also highlighted that PONV continues to be unpleasant and dangerous for many patients. The literature revealed strong evidence to support the beneficial effects of using acupuncture on the pericardium P6 acupoint site (N = 5), liberal supplemental intravenous fluids with crystalloid solutions (N = 4) and the use of ondansetron as a first line antiemetic in combination with dexamethasone to treat and manage PONV (N = 4). Other potential interventions with minimal evidence supporting their use in PONV included inhaled aromatherapy, standardized specific aromatherapy scents, and supplemental oxygen (N = 7).

Implications: Based on these results, a best practice recommendation for integrative nursing to treat PONV includes a cluster of four interventions. These interventions include the use of controlled breathing techniques, acupuncture of the pericardium P6 acupoint, liberal intraoperative supplemental intravenous fluid of 30 mL/kg/hour crystalloid solutions, and the use of ondansetron as a first line antiemetic therapy in combination with dexamethasone. Future research on the optimal treatment of PONV using an integrative approach is needed to explore optimal timing, duration, and depth of P6 acupuncture and appropriate combinations of therapies for sequencing interventions and maintaining optimal symptom control for postoperative patients. An integrative approach to PONV by using evidence-based interventions has potential to enhance postoperative patient outcomes.

Abstracts of Poster Presentations

**ANALYZING CONCEPTS TO THEORIZE
IN THE HUMAN SPIRIT OF PALLIATIVE CARE**

ANALYZING CONCEPTS TO THEORIZE IN THE HUMAN SPIRIT OF PALLIATIVE CARE

Overview: Analyzing Concepts to Theorize in the Human Spirit of Palliative Care

Kimberly Shea, PhD, RN, CHPN
Clinical Associate Professor
College of Nursing
University of Arizona
Tucson, AZ

Pamela Reed, PhD, RN, FAAN
Professor
College of Nursing
University of Arizona
Tucson, AZ

Purpose/Background: Palliative Care is increasingly becoming an integral component of nursing care, as influenced by two important trends: 1) Advances in healthcare that offer greater use of technology, and 2) Treatments for serious health conditions that extend life. Palliative care, or comfort care, is provided as adjunct to or in lieu of aggressive or curative treatments. There continues to be a need for research that clarify the meaning and identify creative applications of palliative care. The purpose of this symposium is to present a systematic analysis of five diverse concepts and extend their meanings into the delivery of palliative care. Each of these concepts refers to underlying human processes of the spirit that are related to individuals' affirmation of life while facing death: *self-transcendence, storytelling, prayer for healing, abandonment* and *early palliative care*.

Organizing Concept: "Palliative care affirms life by supporting the patient and family's goals for the future, including their hopes for cure or life-prolongation, as well as their hopes for peace and dignity throughout the course of illness, the dying process and death" (National Consensus Project, 2013). Often we think of palliative care from a *temporal* perspective of illness, particularly in reference to individuals facing impending end of life. However, individuals that have not experienced a *temporal* approach to palliative care such as trauma victims, or neonates and their families, suddenly find themselves engaged in the dying process. Theorizing on the meaning of palliative care from a *spiritual* perspective broadens the *temporal* context of palliative care to include a future that is both near and far. The concepts presented enable patients and families to focus on affirmation of the human spirit through caring relationships, meaning, and dignity.

Internal Consistency of Concepts: Each paper applies a systematic analysis to a concept that is not usually associated with palliative care along with an example of a specific patient care population. Acknowledging the tension between *temporal* and *spiritual* perspectives of palliative care provides an opportunity to explore how these diverse concepts, individually and together, expand understanding of palliative care.

Logic Linking to Research and Practice Problems: Access to palliative care, at the "right time" is of importance to research and practice. Through strategic analysis of concepts that acknowledge the human spirit, we can better understand patients' and families' experiences in facing health threats and end of life discussions to journey with them through palliative care.

Conclusions: Results from analysis of these five diverse concepts provide a spiritually as well as temporally-based view that extends the meaning of palliative into new contexts. Once defined, each concept can be examined for application to different age groups, situations and cultures. Results have implications for new areas of nursing research and practice.

ANALYZING CONCEPTS TO THEORIZE IN THE HUMAN SPIRIT OF PALLIATIVE CARE

Concept Analysis of Storytelling: Palliative Care for Trauma Patients

Kimberly Berry, RN, BSN
Doctoral Student
College of Nursing
University of Arizona
Tucson, AZ
berryki@email.arizona.edu

Kimberly Shea, PhD, RN, CHPN
Advisor
Clinical Associate Professor
College of Nursing
University of Arizona
Tucson, AZ

Heather Coats, PhD, APRN-BC
Assistant Professor of Research
College of Nursing
University of Colorado
Aurora, CO

Purpose/Background: Storytelling in the clinical setting does not assume objectivity but allows patients to have the opportunity for the expression of subjectivity in their own care. Providers for patients affected by disease or other life limiting factors have long used storytelling. Providers, when asked, “how much time is left?”, use stories of other patients to provide hope. The process of storytelling provides maps for the ill to give value to their present life and evaluate goals. Palliative care supports hope for a future, especially when a person with limited life expectancy can engage in storytelling. Palliative care is unknown in the trauma patient population. These patients may have been otherwise healthy individuals, but were in the wrong place at the wrong time, and are now faced with maintaining a sense of self and human spirit among life altering decisions. The aim of this concept analysis is to clarify and define storytelling by the trauma patient within the realm of palliative care. This clarification can provide subjective and patient-centered practices in the emergency department where palliative care practices have often focused on physical aspects. The concept analysis components of definitions, attributes, antecedents, consequences, and empirical referents of storytelling are presented.

Definition of Concept: The use of storytelling as an integrative modality has been called narrative medicine and can be defined as “an account of living, a narrative that can give meaning and coherence to life and perhaps direction to lives remaining” (Stanley& Hurst, 2011, p.144).

Concept Analysis Process: Six components of concept analysis include: (1) Define storytelling as it pertains to emergency nursing, its impact on empathy and its ability to assist the trauma patient in maintaining a sense of self and spirit; (2) Discuss attributes of storytelling in relation to the trauma patient population (measured by opinion and perspectives); (3) Present storytelling exemplars and identify how patient situations were improved by the implementation of this technique; (4) Outline antecedents of storytelling such as powerlessness from the inability to speak to one’s true self, depersonalization of patients for providers and feelings of inefficacy; (5) Discuss ramifications of storytelling including, better communication with providers, promotion of empathy, reflection, professionalism and trustworthiness; (6) Discover empirical referents of storytelling such as construction of meaning from illness, enhancement of care, cultivation of a patient-centered agenda, and provision of intrinsic therapy.

Logic Linking to Practice: Helping trauma patients to engage in storytelling is an innovative way to humanize patients for nurses and other healthcare workers. The trauma patient population is one that has unpredictable admission criteria. Individuals in this population begin their day healthy and find themselves in critical condition. By understanding storytelling in this unexpected application of palliative care, providers can engage patients in a narrative of hope in the future and provide comforting, patient-centered care.

Conclusion: Storytelling offers a subjective way to deliver patient-centered care. Palliative care provides options that affirm life for each individual. A person’s life can be measured in years or moments, and storytelling helps nurses to optimize that time.

ANALYZING CONCEPTS TO THEORIZE IN THE HUMAN SPIRIT OF PALLIATIVE CARE

Concept Analysis of Self-Transcendence: Palliative Care for Emerging Adults with T1DM

Terri Shill, MSN, RN
Doctoral Student
College of Nursing
University of Arizona
Tucson, AZ
tshill@email.arizona.edu

Pamela Reed, PhD, RN, FAAN
Professor
College of Nursing
University of Arizona
Tucson, AZ

Purpose/Background: The aim of this concept analysis is to clarify self-transcendence in relationship to emerging adults with Type 1 diabetes (T1DM) and illuminate the need for palliative care interventions that facilitate self-transcendence. Concept analysis components (Walker and Avant, 2011), including definitions, attributes, antecedents, consequences, model case and empirical referents of self-transcendence are presented.

Diabetes is the seventh leading cause of death in the United States, and approximately 1.25 million adults and children are currently diagnosed with T1DM. Emerging adults (age 18 to 25 years) are vulnerable to decreased psychosocial functioning and serious diabetes-related complications due to the burden of T1DM and self-care demands. Emerging adults with T1DM commonly experience symptoms of diabetes related distress which negatively impact self-care and glycemic control. Emerging adults demonstrate the worst reported glycemic control compared to other age groups. Self-transcendence refers to an individual's inherent capacity to expand personal boundaries and experience well-being. The burden of T1DM may evoke increased self-transcendence levels, offering a resource for mitigating diabetes distress symptoms.

Definition of Concepts: Self-transcendence emerges as part of healthy human development and may be variously expressed to influence well-being through cognitive, creative, social, spiritual, and introspective pathways. The definition of self-transcendence presented here is the capacity to expand self-boundaries in multiple ways, including intrapersonally (awareness of personal beliefs, values), interpersonally (relating to others and the environment), temporally (integrate one's past and future to provide meaning in the present), and transpersonally (connect with dimensions beyond the observable world).

Internal Consistency of Concepts: Six components of this concept analysis of self-transcendence in the context of providing palliative care for emerging adults with T1DM include: (1) Define self-transcendence as it pertains to nursing, philosophical, developmental, and behavioral viewpoints; (2) Discuss attributes of self-transcendence (measured by perspectives and behaviors) in relationship to a sense of well-being and meaning and purpose in life; (3) Present a model case; (4) Describe antecedents of self-transcendence: vulnerability experienced from health threats such as T1DM; (5) Discuss consequences of self-transcendence including expanded consciousness, a sense of well-being and purpose, increased quality of life, and interconnectedness with self, others, and the universe; (6) Examine empirical referents of self-transcendence, including interventions that facilitate and promote personal introspection, reaching out to others, creativity, and connecting with one's god.

Logic Linking to Research Problem: Self-transcendence has not been studied among emerging adults with T1DM, indicating a significant gap in the literature. Emerging adults require innovative, developmentally appropriate interventions and strategies to specifically address the psychological burden of T1DM, yet research has not translated findings into the development of new interventions for this population.

Conclusion: Nursing has a significant role in addressing the complex psychosocial factors associated with decreased self-care and glycemic control among emerging adults with T1DM. Self-transcendence is a potentially powerful coping resource in this health experience. Analysis of the concept of self-transcendence in this health context provides results that can facilitate needed research to inform the design of palliative care interventions to facilitate self-transcendence and promote well-being.

ANALYZING CONCEPTS TO THEORIZE IN THE HUMAN SPIRIT OF PALLIATIVE CARE

Concept Analysis of Nurse Abandonment at End of Life in the Context of Cancer Care

Suzanne Walker, CRNP, MSN, AOCN, BC
Doctoral Student
College of Nursing
University of Arizona
Tucson, AZ
walkersu@email.arizona.edu

Kimberly Shea, PhD, RN, CHPN
Advisor
Clinical Associate Professor
College of Nursing
University of Arizona
Tucson, AZ

Pamela Reed, PhD, RN, FAAN
Professor
College of Nursing
University of Arizona
Tucson, AZ

Purpose/Background: The end of life (EOL) period represents a challenging time for cancer patients and their caregivers as they face significant losses, including the loss of their oncology healthcare provider (HCP) as care is assumed by the palliative care or hospice HCP. The sudden termination of the patient-oncology HCP relationship can lead to perceptions of abandonment, with negative implications for quality palliative care. Abandonment at EOL has primarily physician-centric undertones, as it has been characterized in the literature as the undesired and un-negotiated termination of the physician-patient relationship. The concept of nurse abandonment at EOL remains an underexplored area for palliative care. The purpose of this concept analysis is to refine and further develop the concept of nurse abandonment at EOL in the cancer setting and to provide direction for future research.

Definition of Concept: Abandonment at EOL is an elusive concept, particularly with respect to nurse abandonment. The term “abandonment” in healthcare has historically evoked a legal connotation. In the context of EOL care, however, it can be defined as a multidimensional phenomenon that involves physical, emotional, and behavioral features, is sudden and unwanted, and is precipitated by the cessation of disease directed therapies, loss of continuity of care, and/or poor or absent communication with the HCP. Because most of the research has been physician-directed, it is unclear if a similar definition can be applied to nurse abandonment at EOL.

Concept Analysis Process: Principle-based concept analysis (Morse et al., 1996; Morse et al., 2002; Penrod & Hupcey, 2005) includes four main tenets : 1) The epistemologic principle determines conceptual clarity of nurse abandonment at EOL, differentiating it from other concepts such as non-abandonment or continuity of care, 2) The linguistic principle establishes the consistency of nurse abandonment at EOL across contexts, including a variety of disease states, 3) The pragmatic principle provides evidence for the applicability of nurse abandonment at EOL to quality EOL care, and 4) The logical principle highlights how clearly nurse abandonment at EOL integrates with other concepts. The level of maturity of nurse abandonment at EOL is evaluated based on each of these principles, and recommendations are made for future conceptual development based on maturity level.

Logic Linking to Research Problem: Nurse abandonment at EOL in the cancer setting is a burgeoning concept which may have significant implications for nurses involved in palliative care. A better understanding of the complexities of nurse abandonment at EOL may ultimately lead to the development of strategies for mitigating these perceptions and improving quality outcomes. Quality EOL care has been targeted as a top priority for research and practice by national organizations such as the Institute of Medicine, Oncology Nursing Society, and National Institute for Nursing Research.

Conclusion: The state of the science on nurse abandonment at EOL is clearly in its infancy, with more research needed to provide conceptual clarity. Future research should be directed toward refining the features of abandonment, establishing theory, and developing targeted interventions that improve the delivery of palliative cancer care.

ANALYZING CONCEPTS TO THEORIZE IN THE HUMAN SPIRIT OF PALLIATIVE CARE

Prayer for Healing in Palliative Nursing Care: A Concept Analysis

Veronica Place, MEd., MSN, RN
Doctoral Student
College of Nursing
University of Arizona
Tucson, AZ
vplace@email.arizona.edu

Pamela G. Reed, PhD, RN, FAAN
Professor
College of Nursing
University of Arizona
Tucson, AZ

Purpose/Background: Palliative care patients enduring severe illness often experience their illness trajectory through a spiritual framework. Many have expressed a sense of comfort and healing when their spiritual needs are addressed. Prayer has been identified as the most common spiritual practice in the healthcare setting and has been found to be a widely used coping mechanism related to illness, particularly in end-of-life. The concept analysis presented here using Walker and Avant's (2011) classic procedure aims to analyze the concept of *prayer for healing* as it relates to palliative nursing care.

Definition of Concept: The meaning of *prayer for healing* varies depending on type of prayer, personal beliefs, cultural background, past experiences, and spiritual development. *Prayer for healing* is defined here as a ritual characterized by self-transcendence where there is human communication with divine or spiritual entities in the hopes of coping with illness, finding meaning, or achieving health. In this context, healing is an individualized movement toward a sense of wholeness within and between the physical, mental, emotional, social, and spiritual dimensions of a person.

Concept Analysis Approach: The iterative steps within Walker and Avant's (2011) concept analysis procedure are used to: 1) Define *prayer for healing* in palliative care and identify uses of the concept from various behavioral, spiritual, religious, psychological, medical, social, and ethical perspectives; 2) Determine the defining attributes of *prayer for healing* such as sincerity, faith, and submission; 3) Identify model cases that demonstrate defining attributes of *prayer for healing*; 4) Describe antecedents of *prayer for healing* which include physical, spiritual, psychosocial, cultural, and sometimes religious factors; 5) Discuss consequences of *prayer for healing* such as developing a sense of purpose, finding meaning, self-transcendence, hope, trust, coping, and health; 6) Investigate empirical referents that demonstrate the occurrence of *prayer for healing*, such as religiosity, spiritual awareness, self-transcendence, and ritual.

Logic Linking Concept to Nursing Practice/Research: *Prayer for healing* is a prevalent practice that transcends time, cultures, religions, and belief systems, underscoring its significance to the human experience and to the promotion of health. As a concept, *prayer for healing* has not been clearly defined. Its role in the healthcare setting, including palliative care, remains disputed, perhaps due to the lack of clarity of its meaning in the nursing literature. A clear definition of *prayer for healing* will promote the support of spiritual needs of palliative care patients. This is important because illness can impact spirituality and, often times, spiritual beliefs can influence healthcare decision making. Furthermore, a number of studies reveal that spirituality is important to patients in times of crisis and during end-of-life. Thus, the utility of addressing spiritual needs, through the use of *prayer for healing* is well documented.

Conclusions: A clear definition of *prayer for healing* is warranted. It will support the spiritual domain of patients, as well as facilitate needed research, using a well-established spiritual practice. Identifying the meaning of *prayer for healing* in palliative care will also contribute to the practical application of a holistic model of nursing care.

ANALYZING CONCEPTS TO THEORIZE IN THE HUMAN SPIRIT OF PALLIATIVE CARE

Early for Everyone: Re-Thinking Palliative Care in the Neonatal ICU

*Megan Quinn, BSN, RN
Doctoral Student
College of Nursing
University of Arizona
Tucson, AZ*

Purpose: Goals of palliative care (PC) are not contrary to curative treatment, rather PC is aimed at improving quality of life and relief of suffering to make curative treatments worthwhile. The concept of *early PC* is not well-defined for any population or discipline, though PC may benefit a person in early stages of any serious illness. This is especially true in the neonatal intensive care unit (NICU) population, which has unique needs and challenges. The purpose of this concept analysis is to critically analyze current PC practice in the NICU, to identify key components, differentiate it from late PC and end-of-life care, and demonstrate its relevancy for neonates and their families.

Concept Definition: Palliative care is well defined by many organizations. The challenge is in defining the temporal context of “early” and in translating typical and defined domains of PC to the NICU environment. PC is relevant as soon after serious illness is recognized; in the NICU this is often before or soon after birth. For PC to be considered “early” it should begin at this time of recognition with parents as surrogates for the infant in partnering with the care team.

Analysis Approach: Use of the pragmatic utility concept analysis method described by Morse exposed inconsistencies in current conceptualizations of PC for neonates. This method was chosen for its process of critical literature appraisal and emphasis on resolving inconsistencies in concepts. Current practice and research in neonatal PC is exclusively focused on end-of-life. This neglects infants and families who are seriously ill but not expected to die. Both this subset of the population and the long period of illness before death or discharge are ignored by current literature. Literature from other populations suggests that early PC focuses on planning and care coordination, decision-making, and coping with diagnosis and symptoms. To approach consistency with the concept of early PC, the primary components of early palliative care in the NICU should be directed at parents and include shared decision-making, care planning, and coping support.

Linking Concept to Practice and Research: This concept of early neonatal PC calls for innovative change of current neonatal PC practices and NICU culture. Parents must be made an integral part of the care team, during major decision-making moments and day-to-day care planning. There must be primary resources in place to identify, support, and follow-up with parents coping with their child’s hospitalization. Neonatal PC should not be a last resort or reserved for infants diagnosed with fatal conditions but applied to all seriously ill infants and their families. Integration of early PC in the NICU may improve parent outcomes related to distress and quality of life.

Conclusions: This concept of early neonatal PC is parent-centered, initiated on admission, and represents a true realization of PC in context. Future practice considerations include identifying current early PC practices and promoting an environment and culture that welcomes shared decision-making. Future research should explore how to implement these practices and include NICU parents as collaborators in research design, analysis, and implementation.

Abstracts of Poster Presentations

APRN AND DNP EDUCATION

APRN AND DNP EDUCATION

Academic-Practice Connections: Creating a Research Community

*Heather Coats, PhD, APRN-BC
Assistant Professor
University of Colorado
College of Nursing
Aurora, CO*

*Edith Matesic, DNP, RN, NEA-BC
Research Nurse Scientist
University of Colorado Hospital
Aurora, CO*

*Paula Meek, PhD, RN, FAAN
Professor
University of Colorado
College of Nursing
Aurora, CO*

*Ardith Doorenbos, PhD, RN, FAAN
Professor
University of Illinois Chicago
College of Nursing
Chicago, IL*

Purpose: The purpose of this abstract is to describe the processes involved in an academic-practice research connection and detail the benefits that evolved from our collaborative community research connection while supporting Magnet standards of a Professional Practice Model (PPM) and nurse research participation.

Background: AACN-AONE Academic/Practice Partnerships Principles describe mechanisms to advance nursing careers through formalized collaborative relationships. Across these two separate institutions (academia-hospital systems), knowledge needs to be shared among partners for joint research endeavors. For the hospital system, Magnet status requires a PPM depicting how nurses practice, collaborate, communicate, and develop professionally through research activities to provide the highest-quality care (ANCC, 2019). This partnership supports the hospital's PPM of "interprofessional relationships ...in the delivery of evidence based quality care."

Methods: The study PI met with key stakeholders (CNO, Assistant CNO, and director, Office of Professional Development) over a 3 month timeline for relationship development. The administrative stakeholders set up next level of connection: the nurse managers arranged for the PI to present at each individual unit's staff meetings over the next 3 months. The continued collaboration over 2 years involved the PI coordinating: 1) regularly scheduled meetings and recruitment rounds with research nurse scientist to brainstorm on any recruitment difficulties, since this individual was the community connection expert in the hospital system, 2) weekly contact with nurse managers and charge RN's on each individual unit for recruitment rounds, 3) notification of recruitment progress from the PI to key stakeholders via e-mail communication and in-person meetings.

Results: This approach to building connection allowed for a successful academic-practice partnership. Overall, effective strategies of a collaborative academic-practice research recruitment methods were: identifying and meeting with key hospital stakeholders, building trusting relationships with hospital partners, and having weekly in-person contact and frequent e-mail communication with research nurse scientist, nurse managers and clinical nurses on each unit. Key hospital stakeholders were necessary for facilitating, the PI's entry into the practice community. Taking time, prior to recruitment, was vital for building a research community, integrating the Magnet hospital's PPM of interprofessional relationships to deliver evidence based quality care and mutual goal to improve lives.

Implications: AACN/AONE guidelines declare cornerstones for joint accountability in partnerships, which include respectful and trusting relationships that recognize the contributions of both the academic and practice. A collective trust was developed between all interested parties facilitating avenues for successful recruitment strategies. Additionally, such relationships support ANCC Magnet goals that nurses participate in research activities within the professional practice model framework to lead change and advance health for patients enrolled in the study.

UCH Professional
Practice Model



APRN AND DNP EDUCATION

Fostering DNP-PHD Student Collaboration: A Global Project

Yvette Rodriguez, BSN, RN, PhD Student, Biobehavioral Nursing and Health Informatics, University of Washington, Seattle, WA; Morgan Busse, BSN-RN, DNP-FNP(C), DNP-FNP Candidate, School of Nursing, University of Washington, Seattle, WA; Marissa Masihdas, BSN-RN, DNP-FNP(C), DNP-FNP Candidate, School of Nursing, University of Washington, Seattle, WA; Jane Kim, BSN-RN, DNP-FNP(C), DNP-FNP Candidate, School of Nursing, University of Washington, Seattle, WA; Sarah Gimbel RN, MPH, PhD, Associate Professor, Department of Family Child Nursing, University of Washington, Seattle, WA

Purpose/Aim: The aim of this project was to foster DNP-PhD-student collaboration through a pilot community-based early education program in the community of Claverito in Iquitos, Peru. Background: Research has shown the potential for DNP-PhD student collaborations to generate and disseminate nursing knowledge and evidence-based practice. However, there are few opportunities to foster these collaborations while students complete their graduate programs and even less so within a global context. Considering the expectation that PhD and DNP students will work collaboratively during their professional careers, it is imperative that cultivation of these partnerships are concurrent with their educational development. This project describes the benefits of leveraging such partnerships to develop, implement and evaluate the Academia Familiar del Amazonas (AFA), an adaption of an existing evidence-based family-centric health and education program, in a global setting.

Methods: The collaborative team included three DNP students and one PhD student. A nursing PhD faculty member mentored the team throughout the project. Gitlin, Lyons, & Kolodner's five-stage process model of collaboration was utilized to create a systematic approach for effective interdisciplinary partnership. The stages of the model included (1): assessment and goal setting, (2): determination of a collaborative fit, (3): resource identification and reflection, (4): project refinement and implementation, and (5): evaluation. To ensure active participation, weekly Skype meetings were mandatory for all student collaborators. Additionally, weekly group check-ins with faculty were conducted to ensure that the project implementation was progressing accordingly. Evaluation of the collaborative process was assessed through AFA program evaluation from community members and collaborators. Nursing student reflections and feedback were also assessed. The project planning, implementation, and evaluation took place from June-September 2018.

Outcomes Achieved: The PhD student managed tool and database development, and DNP students selected and adapted AFA. The nursing student team collaborated with the community of Claverito, the School of Nursing at Universidad Nacional de la Amazonia Peruana (UNAP) and InterACTION Labs, an interdisciplinary research team of scientists from the University of Washington and Universidad San Marcos, with an existing relationship with Claverito, to successfully implement AFA with six Claverito families. Families reported being likely or extremely likely to recommend the AFA program and requested more classes in the future. The DNP and PhD students reported overall satisfaction with the collaborative process and felt better prepared for future interactions with nursing colleagues and community partners. They highly recommended similar experiences for other students in graduate nursing programs and wished that BSN students could have been more integrated in the process.

Conclusions: With the common goal to work with community members to address health and education outcomes, the diverse backgrounds, knowledge, strengths and abilities of each student were identified and incorporated in this project. Promoting DNP-PhD collaborations fosters mutual respect and understanding of each other's skills and is one innovative strategy to decrease the know-do gap and accelerate implementation of evidence-based programs. More opportunities in higher education for DNP-PhD and BSN collaborations should be made available to promote the likelihood of future collaborations outside of academia and alongside the community.

Funding: The Center for Global Health Nursing at the University of Washington provided funding for student travel and program costs with support from private donors. The 100,000 Strong in the Americas Innovation Fund provided additional funding for student training and aid.

APRN AND DNP EDUCATION

Practice Climate Effects on NP Role Function and Patient Outcomes in Ambulatory Care

Pauline Wang-Romjue, PhD, MN, RN
PhD Student, College of Nursing
University of Colorado, Denver
Denver, CO

The NP workforce is needed to help fill the gap created by an imminent 20,400 ambulatory care physician shortage that is expected by 2020. A supportive practice climate is crucial for NPs to meet this demand. Yet, it is unclear which practice climate attributes can affect NPs' practice.

Theory: The Ambulatory Research Model (ARM), used as the framework for this study, is based on Donabedian's structure, process, outcomes of quality of care model (Donabedian, 1966), Eisenberger's (1986) perceived organizational support, and Meleis's (2000) health transitions theory. These foundational models support the four detailed constructs of ARM: structure/climate, organizational attributes, transition agent, and transition recipient. Structure refers to the organizational climate and organizational attributes, as perceived by its employees. Employees refer to NPs. Organizational support is embodied in managerial support. The transition agent is the NP and the transition recipient is the patient.

Aim: In the ambulatory care context, the six specific aims are: (a) to examine the extent of managerial support attribute effects on the practice climate; (b) to explore the influence of managerial support attributes on NP role function; (c) to explore the effect of the practice climate on the NP role function; (d) to examine the influence of the NP role function on patient outcomes; (e) to explore which practice climate and managerial support attributes have significant effects on NP role function and (f) to examine which practice climate and managerial support attributes have significant effects on patient outcomes.

Method: Exploratory descriptive cross-sectional design with the Dillman et al. (2009) survey method, a convenience sample of 47 NPs from a population of 180 NPs, who work at 8 ambulatory clinic facilities belonging to the Southern California Corporate Office, completed the 74-item electronic survey in REDcap.

Findings Indicated:

- a. Managerial support attributes have the most influence on the practice climate and NP role function.
- b. Only organizational support of the practice climate scale influenced the NP role function.
- c. The NP role function had insignificant influence on patient outcomes.
- d. The practice climate and managerial support have insignificant influence on NP role function and patient outcomes.

Conclusion: Organizational and managerial support significantly influenced the practice climate and NP role function and not patient outcomes. Administrator ignorance of NP role function, unequal treatment of NPs compared with physicians plague the practice climate and NP role function.

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APRN AND DNP EDUCATION

Physician Perception of APRN Roles, Responsibilities and Competencies

*Polly Petersen, PhD, RN
Assistant Professor
College of Nursing
Montana State University
Billings, MT*

*Susan Raph, DNP, RN, NEA-BC
Clinical Professor
& Interim Associate Dean
College of Nursing
Montana State University
Great Falls, MT*

Purpose/Aim: The purpose of this study was to further psychometrically examine the Petersen-Sieloff Assessment of APRN Practice (PSAAP©) developed to measure the perceptions of the roles, responsibilities and competences of the advanced practice registered nurse (APRN). Following recognition of the potential for APRNs to move to a medical model of care upon practice onset rather than continuing to practice in the nursing model as they were educated, a tool was developed to measure APRN understanding or perceptions of practice characteristics. In an effort to improve the validity and reliability of the tool, physician perceptions of their practice was explored for comparison to APRN perceptions.

Rationale/Conceptual Basis/Background: As healthcare migrates to a preventative patient-centered focus with reimbursement dependent on patient satisfaction, the primary care setting demands a healthcare system that is equally patient-centered and coordinated in its efforts. Enhanced wellness and prevention within a comprehensive primary care setting is ultimately intended to reduce health care costs and is consistent with the nursing education model (health promoting and holistic) that APRNs utilize to care for patients. As APRNs assume a more independent role as primary care providers, it is important that their practice model is clearly defined. Grounded in King's nursing framework (1981), examination of APRN perceptions of roles, responsibilities and competencies indicates that there are differences from the medical model used by physicians. Following an initial survey of APRNs, it was necessary to measure physician perception of the same variables captured in the PSAAP©.

Methods: The study used a descriptive, correlational quantitative method to measure the roles, responsibilities and competencies of physician practice utilizing a tool already tested for validity and reliability in APRNs. The PSAAP© was developed from a review of the literature followed by a study by expert educators/practitioners and includes four reverse scored items focusing on the medical model of care practice. Initial reliability of the instrument was 0.81 (Cronbach's alpha) with the alphas for subscales: 1) roles 0.602, 2) responsibilities 0.719 and 3) competencies 0.752. Initial factor analysis (Principal Components with a Varimax Rotation) identified four factors with Eigenvalues above 1.0. A random sample of 2774 licensed physicians in Montana with 462 surveys sent out via USPS. Analysis of the PSAAP© will include both the entire instrument as well as the instrument with the reverse scored items removed.

Results: The PSAAP© instrument demonstrated initial reliability in understanding the perceptions of APRNs' roles, responsibilities and competencies among APRNs. Response rate to the physician survey was 17% (N=79). Results of the physician survey are in progress.

Implications: The research has implications in many areas, including policy, regulation, education and practice, as well as further research to understand the practice of APRNs and facilitators or barriers that might exist for APRNs to assume primary care provider status.

APRN AND DNP EDUCATION

Surveying Clinical Preceptors for Advanced Registered Nurse Practitioner Programs

*Markie Gibson, BSN, RN
Doctor of Nursing Practice Candidate
School of Nursing
Pacific Lutheran University
Tacoma, WA*

Purpose: This project will attempt to identify barriers that inhibit, and incentives that would encourage, nurse practitioners (NP) to accept preceptorships so that future quality improvements can assist in overcoming those identified barriers, building incentives and ultimately contribute to increasing the number of available preceptors for students in a nurse practitioner program.

Background: Nurse practitioner programs across the country are experiencing difficulty in attaining preceptors to mentor their students in the clinical setting. This hardship has decreased the number of available openings into graduate programs and the number of new practitioners entering the workforce. With this trend, the primary care setting will continue to suffer as the need for providers already weighs heavily on nurse practitioners to resolve this issue.

Methods: A one-time, 20 item, anonymous survey will be disseminated through email, state NP organizations, and live recruitment at a local NP conference. Participants include nurse practitioners within Washington state with a current license and practicing in a clinical setting.

Outcomes: To analyze the data, descriptive statistics will be used to describe the results of quantitative data. Open ended questions will be systematically coded in order to identify themes. Use of chi square tests will compare differences among proportions between qualitative and quantitative data.

Conclusion: In completion of this project results will benefit the profession of nursing by educating NPs about the opportunities that lie within preceptorships, and helping to ease fears. Results will guide future quality improvements that will overcome barriers to encourage future preceptorships. An increase in available preceptors will help push a greater number of NP students through training programs, ultimately contributing to the need in primary care.

Abstracts of Poster Presentations

CHRONIC ILLNESS

CHRONIC ILLNESS

A Pilot Project for School-Based Screening and Treatment of Latent TB Infection

*Isis Y. Cunningham, BSN, RN, CPN
DNP Student, Hahn School of Nursing
University of San Diego
San Diego, CA*

*Mary Barger, PhD, MPH, BSN
Associate Professor of Nursing
Faculty Advisor, Hahn School of Nursing
University of San Diego
San Diego, CA*

*Susannah Graves, MD, MPH
Chief, Tuberculosis Control and Refugee
Health, Clinical Mentor
Health and Human Services Agency
San Diego, CA*

Project Purpose: This evidence-based project aims to increase awareness about tuberculosis among high school students, identify those at risk, increase testing rates, and offer shorter regimens of treatment for LTBI to increase treatment compliance.

Background: TB remains in the top 10 leading causes of death globally. San Diego's TB incidence is more than 2.5 times higher than the national rate. With 80% of those cases secondary from reactivation of LTBI rather than direct exposure, increased efforts should be sought for screening and treatment of LTBI. Five recent cases of active tuberculosis in the county's public high schools demonstrate the need for effective screening and treatment interventions in this setting. A shorter combination regimen of isoniazid and rifapentine (3HP) given once weekly over a 3-month period via DOT, was approved by the CDC and the American Academy of Pediatrics. This regimen has shown higher compliance rates compared to the 9-month of daily self-administered isoniazid.

Methods: A one-time TB educational presentation was given to Freshman. A pre- and post-test was administered. Educational materials and a TB Risk Assessment tool were provided in English, Spanish, and Swahili. Students with more than one risk factor and who had not completed previous treatment for LTBI were referred to their primary provider for TB testing. A confidential package was sent to the parents of at risk students recommending testing. It also contained information for their providers with an official letter from the County of San Diego encouraging them to prescribe shorter regimens available. An official medication administration form from the school district was also provided for the 3HP option. A follow-up call was made after 2 weeks to ask parents about testing, results, and decision to treat. A medication administration log was kept by the school nurse to monitor for side effects and compliance through DOT. Incentives were given throughout the program to increase participation and compliance.

Outcomes to Date: After the TB Education intervention, there was an average increase in test results of 24.5% percentage points and 87% of students agreed that the presentation had improved their knowledge about TB. Of 294 Freshman students, 56 (19%) returned the TB Risk Assessment, 43% (n=24) of those were found at risk for TB. So far, 3 (12.5%) of students have been tested, all with negative results, 1 (4%) refused testing, 1 (4%) changed schools, and 13 (54%) are planning to get tested. Six parents were not reached during follow-up.

Conclusions: A brief education intervention was successful in increasing awareness and knowledge about TB among students. There was a low return of Risk Assessments but a high percentage of students at risk for TB and who had not been tested. These results highlight a great opportunity to reach these students in the school setting. Requiring the completion of a TB Risk Assessment questionnaire as part of the health requirement for admission may capture those students who are less likely to see a doctor regularly. The feasibility of offering 3HP via DOT at school is yet to be assessed.

CHRONIC ILLNESS

Education Intervention to Reduce Violence against Nurses in the Emergency Department

Maria Gaytan, BSN

Register Nurse

Mervyn M. Dymally School of Nursing,

Charles R. Drew University of Medicine and Science

Los Angeles, CA

Purposes/Aims: The objective of the study is to examine the effect of education related to workplace violence on the knowledge and the incident of lateral violence among Register nurses (RN) working in the Emergency Room Department (ED) within two years of employment.

Rationale/Background: There is a high global concern for workplace violence (WPV) against health workers. The World Health Organization (WHO) estimated that 8% to 38% of health workers suffer physical violence during their careers, and more are threatened or exposed to verbal aggression. Previous research revealed workplace violence against nurses in the ED is increasing and is of grave concern. The focus of this study is to encourage RN's to participate in education/ training programs to learn organizational policies and use situational awareness to recognize the potential risk for violence.

Methods: We will use pre-post experimental design to collect data at baseline and one-month post education/training. ED nurses will be divided into two groups, one group receives the education/training and the second group receives the paper information. Education/training will be provided to the second group at the end of the study. Data will be collected using a questionnaire that includes questions related to demographics, knowledge, attitude, perceptions, and history of exposure to lateral violence. Analysis of the data will be conducted using descriptive statistics, bivariate to compare responses between the two groups. Changes in the knowledge score between the pre and post survey among the groups will be examined using multiple linear regression. We will compare the level of lateral violence before and one-month after the education/training using chi square test. The Institutional Review Board approval will be obtained.

Brief Description of the Undertaking/Best Practice: The Emergency Department nurse's safety and security should take seriously. The implication of education on workplace violence provides preventive measures and decrease workplace violence. Education/training will include the following sessions:

Training on verbal and physical intervention for nurses to learn conflict de-escalation.

2. Positive communication training for nurses to identify and report bullying and harassment without fear of retaliation.

3. Active shooter training to allow nurses to understand their role in a high- risk situation, how to maintain their safety and help others to be safe.

Expected Outcomes: The results will demonstrate that for RNs working in the ED, education/training will increase knowledge and reduce lateral violence. Educating/training for awareness and preparedness on workplace violence can maintain safety at work and should be started within the first two years of employment.

Conclusion/Implications for Clinical/Educational Practices: Clinical contributions, are focus in maintaining one of the nurse's basic needs of safety while at work and self-actualization. Nurses should be injury and psychologically free from fear of workplace violence so they provide the best patient care. As for education, recommendations are made to nursing schools and hospitals to implement workplace violence training program as part of their nursing training curriculum. Researchers should continue to survey nurses, collect hospital data to develop research studies that will contribute to encouraging nurses to report any acts of violence while at work.

Funding: Supported in part by NIH grants UL1TR001881, U54MD007598, and S21 MD000103.

CHRONIC ILLNESS

Improving Hypertension Utilizing an Evidence-Based Weight Management Protocol

*Belinda Akakpo Maxwell, RN, BSN PCCN
Doctorate of Nursing Practice Student, Hahn School of Nursing
University of San Diego
San Diego, CA*

*Joseph Burkard, DNSc, PhD
Clinical Advisor, Associate Professor
USD DNP/PhD Program
USD Clinician/Researcher/Educator
Hahn School of Nursing
University of San Diego
San Diego, CA*

*Rodney G. Hood, MD
Clinical Mentor
President, Multicultural Health Foundation
President, CareView Medical Clinic
San Diego, CA*

Purpose: The purpose of this project is to evaluate the impact of NP Led phone follow-up calls on patients with hypertension (HTN) and weight loss needs to improve weight control, cardiovascular risk and quality of life.

Background: Evidence shows that a 1.2-kg weight loss can reduce systolic blood pressure (SBP) by 3.8mmHg. Thus, a 10kg (22lbs) weight loss is likely to yield a SBP decrease of as much as 32mmHg. Such results would positively impact quality of life and costs. The simple approach of instructing patients to eat less and increase physical activity to lose weight often fails over time, especially when they lack sustained encouragement leading to decreased willpower, fewer efforts, and failure of their weight loss program.

Process: This Evidence-Based Project is built on the Iowa Model in an outpatient primary care clinic. Participants were enrolled in a weight loss program and retained by using a multimodal strategy which included motivational interviewing, community involvement, and frequent follow-ups. The Glasgow's 5A's of behavior change engages participants by shifting the attention from the traditional weight loss needs to health outcomes. We ASKed for permission to discuss weight management. We ASSESSed participants' risk factors. We ADVISEed on benefits of weight loss and options. We AGREEed on SMART goals. We ASSISTed by promoting trust, collaboration, and empowerment.

Outcomes: Weight Loss, BMI, Waist circumference, Blood Pressure, and Quality of Life outcomes are pending.

Conclusion: This ongoing project is meant to empower participants to successfully adhere to a weight loss program to better control their HTN. It ultimately aims at improving wellbeing leading to healthier communities. Successful results may lead to improved blood pressure management and increased quality of life.

CHRONIC ILLNESS

Inflammation, Depression and Non-Adherence Correlates in Persons on Hemodialysis

Kathleen Fulmer, RN, PhD(c), MSN, FNP, CNN
Ellen D'Errico, PhD, RN, NEA-BC, Director PhD Program, Associate Professor
Fayette Truax, PhD, RN, Assistant Professor

School of Nursing
Loma Linda University
Loma Linda, CA

Purpose: The purpose of this study to determine if there is relationship between inflammation, depression and the End Stage Renal Disease (ESRD) hemodialysis (HD) patient's adherence to dietary and fluid restrictions, medications and treatment times necessary to manage life on hemodialysis.

Background: Prior studies have shown a link between inflammation and depression and depression and non-adherence, but little is known about the possible relationship between inflammation and non-adherence with depression as a mediating factor. The hemodialysis patient is at risk for a high inflammatory state as evidenced by the elevation of the pro-inflammatory cytokine, interleukin-6 (Il-6) which has been linked to lower serotonin levels and development of depression. The biological and psychological stress of living with ESRD on HD increases the risk for depression which is the leading psychological disorder affecting these patients which is also under-diagnosed and under-treated. Depression can manifest itself in the maladaptive behavior of non-adherence which has been associated with increased mortality, morbidity and decreased quality of life for the HD patient.

Methods: This study will assess if there is a relationship between the pro-inflammatory cytokine Interleukin-6 levels, depressive symptoms scores of the Beck Depression Inventory II (BDI-II), and adherence scores using the End Stage Renal Disease Adherence Questionnaire (ESRDAQ), and the averages of interdialytic weight gain (IDWG), serum phosphorous, potassium, and number of missed/shortened treatments in the previous 12 months. The sample frame will include English and Spanish speaking patients age ≥ 18 years to age 90 on HD for at least 12 months undergoing treatment 3 times a week for duration of at least 3 hours. The criteria will allow for the effects of the stressful initial adjustment phase to dialysis to impact the patient and allow for the development of behavior patterns. Exclusion criteria include patients with dementia/cognitive impairment, nursing home residents and current use of anti-depressant and anti-inflammatory medications. Power analysis estimates that a sample size of 67 participants is adequate.

Data Analysis: Descriptive statistics will determine the prevalence of inflammation, depression and adherence. Multiple linear regression analyses will determine if a relationship exists between Il-6 and ESRD-AQ scores, objective adherence biomarkers, fluid gains and treatment times with depression as a mediator. Also, Pearson R will be performed between objective and subjective adherence data.

Implications for Translation to Practice/Future Research: If a significant correlation between the variables is found, implications of this study include the development of a novel framework interconnecting the depression and inflammation as factors influencing the phenomena of non-adherence laying a foundation for a situation specific nursing model that will assist nurses in the care of HD patients. It may help reframe depression as part of a physiological sequelae arising from inflammation associated with kidney failure and not as a weakness of one's character or mental health. Thus, HD patients may be more willing to accept treatment for depression. For researchers, new insight may be provided for generating interventions to reduce inflammation and address depression which may subsequently help improve adherence and the quality of life for ESRD patients.

Funding: This study is partially funded by a grant from the American Nephrology Nurses Association. Llera:2170392.

CHRONIC ILLNESS

Engagement of Primary Stakeholders to Tailor a Comprehensive Transitional Care Model for Persons Who Have Experienced a Stroke and Their Caregivers

Lorre Laws, PhD, RN
Biobehavioral Division, College of Nursing
The University of Arizona
Tucson, AZ

Introduction: Stroke survivors and caregivers participated in focus group discussions describing their transitional care experience. Resulting data informed the refinement and tailoring of a stroke-specific transitional care model corresponding to the Naylor Transitional Care Model's comprehensive and effective transitional care components. Study aims were to refine and develop stroke-specific exemplars for each transitional care component: patient engagement, caregiver engagement, complexity management, patient education, caregiver education, patient and caregiver well-being, care continuity, and accountability.

Background: Stroke affects approximately 795,000 U.S. persons annually, 665,000 of whom experience disability. Acute stroke care advancements have not been paralleled in the community rehabilitation and recovery phase of stroke. The American Heart Association/American Stroke Association (AHA/ASA) guideline calls for stroke recovery to be managed as a chronic condition, guided by a community-based model of care. Transitional care, bridging in-patient and out-patient settings and providers, is one strategy by which to deliver stroke care aligning with the guideline. Transitional care is effective in other populations (e.g. myocardial infarction, heart failure) and is typically funded by a hospital's ability to avoid costly readmission penalties. Stroke has been an excluded diagnosis for readmission penalties since 2014. Due to a policy gap, hospitals are not incentivized to provide transitional care, resulting in poor patient and caregiver outcomes and increased healthcare utilization.

Methods: A total of twenty participants were recruited from Tucson, AZ stroke support groups to participate in focus group discussions. These discussions were audio recorded, transcribed, and analyzed using deductive and inductive content analysis strategies. Eight *a priori* deductive categories corresponded to each of Naylor's transitional care components, described above. An open coding process was used to inductively analyze data not captured by the *a priori* categories.

Results: A total of eleven stroke-specific transitional care components emerged from content analysis. Naylor's eight comprehensive and effective transitional components were refined and expanded to include stroke-specific exemplars. Three additional stroke-specific transitional care components emerged: neuropsychiatric management, collective efficacy, and transportation-driving. Considerable healthcare system passivity exists for postacute stroke care delivery, leaving survivors and caregivers feeling abandoned and marginalized. There is a need for one community-based point of access with a designated community stroke nurse providing consistent, iterative feedback and support.

Implications: Stroke continues to be a non-qualifying diagnosis for hospital readmission penalties. The AHA/ASA guidelines recommend a community-based care model to guide postacute stroke care as a chronic condition. A stroke-specific transitional care model has potential to meet the guidelines. The stroke-specific transitional care components identified in this study serve as building blocks from which a stroke transitional care model and interventions can be developed and tested. The innovative role of a community stroke nurse could serve as the needed point of community access and communication feedback, while augmenting stroke community capacity.

CHRONIC ILLNESS

Screening for Kidney Disease in Primary Care: A Case Study

*Sarah Llewellyn, PhD, RN
Assistant Professor
School of Nursing
University of Alaska Anchorage
Anchorage, AK*

Purpose: The purpose of this case study was to increase understanding of the practice and contextual factors related to screening for kidney disease in young men with hypertension.

Background: Early identification of kidney disease is a focus of both the Center for Disease Control's CKD initiative and the CKD objective in Healthy People 2020. Reported screening rates for kidney disease in patients with hypertension is low despite the link between these two diseases. Automated reporting of the estimated glomerular filtration rate (eGFR) has helped increase visibility of altered kidney function when serum chemistry panels are ordered. However, patients with hypertension, and specifically African Americans with hypertension, may not have notable increases in serum results until later in the disease progression. An additional laboratory screening for urine albumin: creatinine ratio (UACR) is recommended to identify early kidney dysfunction. Also, results of both UACR and eGFR are needed to apply the kidney disease staging tool provided in evidence-based guidelines. The Chronic Care Model served as the foundation for the study as contextual factors were integral to the study.

Methods: An observational mixed-method single embedded case study approach was used where data were collected in a convergent parallel design. One academic medical center with multiple primary care clinics was identified as the case. The three data sources included one primary care provider demonstrating use of organizational resources, a primary care provider survey (n = 12), and an electronic health record review of African American or European American men aged 18-44 with hypertension (n = 394).

Results: Data from the primary care provider demonstration showed direct link access to national guideline databases, but not disease specific guidelines or guideline translations to practice. Additionally, the electronic medical record had a basic level of clinical decision support such as ordering chemistry panels for patients on diuretics, but did not offer specific decisional support for kidney disease screening, diagnosis, or staging of disease based on results. Survey responses from primary care providers included both quantitative and qualitative data and highlighted the need for improved translation of guidelines from specialty to primary care and increased organizational support across elements of the Chronic Care Model for identifying kidney disease in their patients. Electronic medical record data depicted practice behaviors and showed that 37 % of patients had a laboratory order for a chemistry panel (with automated eGFR) while 9 % had an order for a UACR. Results of logistic regressions showed patients with more risk factors for kidney disease, and specifically African American patients, had higher predicted probability of screening in both eGFR and UACR. However, the predicted probability for UACR ordering was only 4 % across the cohort and 9 % for the African American patients.

Implications: Findings from this study reinforce the need for actionable translation of guidelines at both the guideline dissemination and organizational levels and illustrates the applicability of the Chronic Care Model as a structure for screening and diagnosing chronic diseases.

Funding: T32 Aging and Informatics 1T32NR014833-01 and Jonas Philanthropies Nurse Leader Fellowship

CHRONIC ILLNESS

PHQ-9 and Food Addiction Results in a 6 Month Weight Loss Intervention Study

*Trina Aguirre, PhD, RN
Assistant Professor
College of Nursing
University of Nebraska Medical Center
Scottsbluff, NE*

*Leeza Struwe, PhD, RN
Assistant Professor
College of Nursing
University of Nebraska Medical Center
Scottsbluff, NE*

*Rebecca Bowman, DNP, APRN,
PMHNP-BC, Mental Health Nurse
Practitioner, Behavioral Health
River Hills Community Health Center
Scottsbluff, NE*

Purposes/Aims: The purpose of the secondary analysis of this study was to determine whether there were changes in the depression and food addiction scores from baseline to 6 months across four weight loss interventions.

Rationale/Conceptual Basis/Background: Obesity is a major health issue globally. Understanding the complex issues associated with overweight and obesity is critical to its appropriate, individualized and effective treatment. Researchers have suggested that addictive tendencies toward food, especially certain foods, contribute to this epidemic. Therefore, using Ajzen's Theory of Planned Behavior, the authors utilized four weight loss interventions in a group of 80 overweight and obese patients, in an attempt to reduce body fat and visceral fat. Screening instruments detected a high number of participants with depression and food addiction, which led to gathering the follow up measures of depression (PHQ-9) and food addiction (YFAS-2) and this analysis.

Methods: One hundred five participants (ages 19-65) were screened for study participation. Eighty-three were enrolled, screened for FA (Food Addiction) + or – and then randomized to one of four intervention groups, IC (information control), MI + I (motivational interviewing + information), P+I (pharmacological + information) or MI + P + I (motivational interviewing + pharmacological+ information). Participants attended a baseline session, 4 weekly sessions, and 5 monthly sessions, regardless of the intervention arm. Measures were taken at each session. Depending upon the randomization, participants also received motivational interviewing, naltrexone-bupropion or information or a combination of two or more of the interventions at each study time point. Those on medication were given titrated doses until they reached a therapeutic level.

Results: Among the participants enrolled in the study, 81.9% experienced some level of depression at baseline with mean score of 10.83 and standard deviation of 6.058. At the end of study intervention (6 months), the depression mean score was 4.35 and a standard deviation of 3.847. Baseline measures of FA identified 37.1% of the originally screened population as being positively food addicted. Six month measures of FA are under analysis, but upon preliminary review have declined.

Implications: Finding such high levels of depression and food addiction confirm author hypotheses that these groups may differ in their responses to treatment and will most likely need more intense intervention to reduce biometric measures.

Abstracts of Poster Presentations

**COMMUNITY NURSING LEARNING AND
EDUCATION**

COMMUNITY NURSING LEARNING AND EDUCATION

Examining Project ECHO within the iPARHIS Implementation Science Framework in a Neonatal Context

*Kimberly Shea, PhD, RN
Clinical Associate Professor
The University of Arizona
College of Nursing
Tucson, AZ*

*Katherine Newnam, PhD, NNP-BC, CPNP
Assistant Professor
The University of Tennessee Knoxville
College of Nursing
Knoxville, TN*

*Sheila M. Gephart, PhD, RN
Associate Professor
The University of Arizona
College of Nursing
Tucson, AZ*

Purpose: Present a theoretical framework to evaluate adoption and effectiveness of a neonatal evidence-based intervention delivered by remote technology-enabled quality improvement facilitation called “NeoECHO”, adapted from “Project ECHO.” **Conceptual Framework Description:** Our approach was to adapt two existing models, Moore’s Framework for Continuing Professional Education and the Promoting Action on Research Implementation in Health Services (iPARHIS) to support the aims of NeoECHO. Moore’s Framework drives the measurement of adoption and effectiveness of Project ECHO at 6 levels of participation; satisfaction, knowledge, competence, performance, patient outcomes and population outcomes. iPARHIS guides the delivery of facilitation at a distance via ECHO and the selection of implementation strategies and mediation and moderation variables (e.g. neonatal intensive care unit context, staffing, and complexity of NICU care).

Internal Consistency: Through research, evidence-based necrotizing enterocolitis (NEC) prevention practices have shown significant reduction in deaths of neonates. It is vital that research be translated into meaningful actions that influence patient care outcomes. However, estimates indicate that two-thirds of organizational efforts to implement research evidence fail. This integrated framework will be piloted in a study that hypothesizes active facilitation via NeoECHO will boost implementation of NEC prevention practices by local clinicians to mitigate racial and ethnic disparities in neonatal outcomes. Mapping measurement to the Moore model is consistent with other ECHOs but integration of iPARHIS concepts expands theoretical knowledge to allow for consideration of other confounding variables that may interrupt or advance facilitation.

Logic Linking Theory to Nursing Practice: Outcome disparities such as the prevalence and treatment of NEC exist because of limited access and/or adoption of scientific evidence supporting best practices. More frequently, telehealth technology is being used to virtually educate and train healthcare providers.

Conclusion: The ECHO model breaks down distance barriers by providing on-site learning through direct, routine interaction with national experts via technology. Technology can facilitate the opportunities to learn, however, engagement in the learning activity, retention and understanding required for implementation to change practice remains elusive. When combined, these two models provide a framework to guide the evaluation of learning and implementation in various neonatal environments.

Funding: Agency for Healthcare Research and Quality (Gephart K08HS022908).

COMMUNITY NURSING LEARNING AND EDUCATION

Informal Learning and Learning Transfer on Nurse's Clinical Performance

Jung Mi Yun, PhD, RN
Researcher
College of Nursing
Pusan National University
Yangsan, South Korea

Dong Hee Kim, PhD, RN
Professor
College of Nursing
Pusan National University
Yangsan, South Korea

Young Choon Park, MSN, RN
PhD Student
College of Nursing
Pusan National University
Yangsan, South Korea

Purposes: The purpose of this study was to examine the correlations of informal learning, learning transfer, and nurse's clinical performance and analyze of influence factors on nurse's clinical performance in South Korea.

Background: Workplace learning in hospitals consist mostly of informal learning processes that take place during specific work situations. Thus, nurses gain the knowledge, skills, and attitudes necessary for their work through informal learning. The informal learning and effective learning transfer are expected to have a positive impact on nurse's clinical performance, but very little has been studied in South Korea.

Methods: This study was a cross-sectional, descriptive study. The target participants of the study were nurses working in two tertiary university hospitals, which is located in a province of South Korea. Data were collected from February to March, 2018. The sample size was calculated using the G-Power 3.1.6 program. When the number of explanatory variables was assumed to be 16, significance level .05, power of test .90, and the effect size .15, the required sample size was 175. In consideration of dropouts, questionnaires were distributed to 204 nurses, and 200 were analyzed as valid data, with 4 surveys excluded due to incomplete answers. The researcher explained the purpose of the study to the nursing departments of six tertiary university hospitals by email, requested the study, and collected data from two hospitals that approved it. Data were collected through a structured questionnaire consisting of questions on the general characteristics, informal learning, learning transfer, and nurse's clinical performance. The questionnaire was carried out by staff members who has received pre-training on the purpose and method of the survey. This study was approved by the Institutional Review Board, and all participants provided written consent. Collected data were analyzed descriptive statistics, t-test or analysis of variance, Pearson's correlation coefficient, and hierarchical multiple regression analysis using SPSS Windows 22.0.

Results: Nurse's clinical performance was found to be correlated with informal learning and learning transfer. In the first step with general characteristics, the factors related to the nurse's clinical performance were clinical career ($\beta=.36, p<.001$), voluntary education participation ($\beta=.27, p=.014$), and the explanatory power of the model was 20.0%. When informal learning was added to the model, clinical career ($\beta=.31, p<.001$), informal learning ($\beta=.25, p<.001$), and voluntary education participation ($\beta=.15, p=.017$) were significantly related to clinical performance and the explanatory power increased 5.5%. Finally, when learning transfer was added, learning transfer ($\beta=.38, p<.001$), clinical career ($\beta=.32, p<.001$) were determined to be influencing factors on clinical performance and the explanatory power increased 10.1%. The total explanatory power of the model was 35.6% ($F=16.75, p<.001$).

Implications: This study shows that informal learning and learning transfer were influencing factors on the nurse's clinical performance. Therefore, Future studies should include program development of informal learning and learning transfer that provides support for wider professional networks and information sharing and encourages collaborative work environments.

Funding: This work was supported by a 2-years research grant of the Pusan National University.

COMMUNITY NURSING LEARNING AND EDUCATION

Engaging Remote Providers in EBP Using a Social Learning Platform

*Jennifer Stock, DNP, FNP-BC
AGNP Program Coordinator
School of Nursing College of Health Sciences
Boise State University
Boise, ID*

Rationale/Background: Evidence-based practice (EBP) is central to providing excellent patient care, but many advanced practice providers (APPs) lack the knowledge and support to continue EBP after graduation. Time and geographical constraints limit access to regional provider meetings and peer-to-peer collaboration. Providers working in remote clinics lack, resources, mentorship and organizational supports necessary for research translation.

Purpose: To improve EBP with APPs in remote urgent care (UC) sites, this DNP project implemented a social learning platform (SLP allowing urgent care providers virtual space to share, discuss, and evaluate healthcare research application for use in practice. Using the Knowledge to Action Framework (Graham and Tetroe, 2013) a quasi-experimental study was designed. IRB waiver was obtained from both academic and clinical sites.

Methods: A pre-survey distributed to 30 urgent care (UC) Advanced Practice Providers (APP) participants inquired about current EBP access, use, discussion and engagement. A social learning platform (SLP) was developed using SharePoint and access was granted to all UC APPs. A post-intervention survey administered 1 month later explored perceived changes in EBP access, use, discussion and engagement with SLP availability. SLP site hits were tracked. Paired t-tests of pre and post surveys were analyzed, and grouping of qualitative themes was synthesized.

Results: A pre-survey (51% response rate) provided valuable baseline data regarding provider perceptions. All respondents agreed or strongly agreed to using EBP materials to guide clinical decisions. A post-survey (20% response rate) was collected two weeks post launch and an unpaired t-test revealed no-significant changes post intervention. Despite these findings, provider perception of current EBP use pre-intervention was high (78%), but increased to 93% post-SLP launch. Site hits totaled over 200 in first two weeks available.

Implications: Social learning platforms could meet remote providers' needs for communication and collaboration. This SLP became a central communication hub, document repository and a virtual journal club allowing asynchronous literature review and an EBP discussion forum. Increasing EBP discussion is expected to translate into better patient outcomes. Tailoring SLPs for use in other clinical settings would provide a novel approach to bridging the evidence-to-practice gap.

COMMUNITY NURSING LEARNING AND EDUCATION

Limiting Emergency Nurse Practitioner Compassion Fatigue Using Self-Care Reminders

Johnna Carrig, BSN, RN, Doctorate of Nursing Practice Student
Patricia Daly, PhD, FNP-BC, ENP-BC, Clinical Assistant Professor
Wanda Larson, PhD, MEd, RN, CEN, Clinical Assistant Professor
Jane Carrington, PhD, RN, FAAN, Associate Professor
College of Nursing
University of Arizona
Tucson, AZ

Purpose: The purpose of this quality improvement project is to endorse regular self-assessment and self-care utilizing mobile reminders to ultimately promote emergency nurse practitioner retention and the consistent delivery of high-quality patient care. This proposal outlines the implementation and evaluation of mobile reminders as a means of endorsing regular self-assessment and the employment of self-care strategies, including controlled breathing, when indicated.

Rationale: The total number of emergency department visits nationally has been rapidly increasing over the past decade. The resulting increased demand, complexity of care delivery, and subsequent time pressure on emergency providers (physicians and nurse practitioners) leads to increasing job dissatisfaction and provider compassion fatigue. There is a gap in the literature regarding the prevalence of compassion fatigue among nurse practitioners. The literature is saturated, however on the prevalence of compassion fatigue and possible interventions in the emergency physician and nurse populations. This literature has illustrated that self-care is the most significant preventative measure for compassion fatigue. This same literature has also illuminated the lasting benefits of mindfulness-based stress reduction strategies, including self-awareness and controlled breathing. Due to increasing utilization of nurse practitioners in high-volume and high-stress settings such as the emergency department, this project will focus on this population. The literature supporting mindfulness-based stress reduction will be applied through mobile reminders. The emergence of smartphones and smartwatches has equipped Americans with access to portable information technology and resources unlike ever before. Mobile reminders, a modernized, feasible, time-efficient, and cost-effective strategy will be employed in the underrepresented population of emergency nurse practitioners to attempt to limit compassion fatigue.

Methods: This project will pioneer the application of mobile reminders for self-assessment and self-management of compassion fatigue symptoms in a sample of 15 emergency nurse practitioners working at Banner University Medical Center. Mobile reminders will be employed via cell phones or watches for four weeks. If the provider has both devices on their person during all working hours, the choice of device will be their decision. Data will be collected through in-person interviews with all participants following the four-week implementation period. Usability, impact on compassion fatigue levels, and perceived benefits and drawbacks will be assessed in the interviews. This data will then be utilized to design a mobile application specific to this population and their needs.

Outcomes Achieved: Following Institutional Review Board approval, implementation and data collection will begin. Outcomes in the form of measurements of usability, impact on compassion fatigue levels, and perceived benefits and drawbacks will be collected via brief in-person interviews following the intervention. Quantitative content analysis will be used to analyze the data.

Conclusions: This project employs self-care mobile reminders, a modernized and feasible strategy, to limit compassion fatigue in emergency nurse practitioners, further promoting retention and the consistent delivery of high-quality patient care. If successful, future projects could be implemented in other patient care settings including, but not limited to, primary care, inpatient care, and other outpatient care settings. These findings could also be compared to staff turnover rates in this specific population for further analysis.

COMMUNITY NURSING LEARNING AND EDUCATION

Academia and Community Coming Together: Making Evidence-Based Practice Real

Bomin Shim, PhD, RN, Associate Professor, School of Health Sciences
Bethany Rolfe Witham, DNP, FNP-BC, Associate Professor, School of Health Sciences
Flannery Moran, BSN, RN, DNP Student, School of Health Sciences
Cindy Mato, BSN, RN, DNP Student, School of Health Sciences
Carrie Fry, MLS, Sciences Librarian, SPU Library
Seattle Pacific University
Seattle, WA

Purposes/Aims: The purpose of this project is to meet the patient care policy and procedure development needs of a newly established free clinic by forming a collaboration between undergraduate and graduate nursing students with clinic staff. The collaboration provides an opportunity for evidence-based practice to come alive in real time, allowing nursing students to see direct application of research and translation into clinical practice.

Rationale/Background: Up-to-date, evidence-based, and pertinent policies and procedures are crucial to the success and safety of new and growing clinics. Freestanding clinics in rural settings have unique challenges in building and establishing strong infrastructure that develops and grows with the communities they serve. In the academic setting, nursing students at the bachelors and doctoral level must meet educational outcomes such as critical evaluation and synthesis of evidence and translational research. These educational activities can provide the theory, research, and resources to meet the policy and procedure development needs of a free clinic. Therefore, a collaboration between academia and the community not only meets the multiple needs of Bachelor of Science in Nursing (BSN) students, Doctor of Nursing Practice (DNP) students, and the free clinic, but also provides an opportunity for nursing research to be directly applied to practice.

Methods: Two DNP Family Nurse Practitioner (FNP) students will develop a protocol that will provide a standardized method to develop and implement new, evidenced-based policies and procedures for the free clinic. Concurrently, BSN students in a Nursing Research course at the same university will find and synthesize current evidence on select patient care policies or procedures that will be used as examples to test and evaluate the effectiveness of this standardized policies and procedures development protocol. Faculty advising the DNP students, faculty teaching the BSN research course, the university health science librarian, and the clinic FNP are in continued conversation to facilitate and guide this process.

Outcomes: This is an ongoing collaborative project. Through the development of a standardized protocol for policy and procedure development, the expected outcome for the clinic is to be equipped with a clear method to ensure safe and effective patient care in their scope and sphere of influence. A standardized protocol of this kind may be a method that other freestanding community clinics may utilize to build new policies and procedures. From an educational standpoint, BSN students not only meet the educational outcome of learning how to search and synthesize current evidence using PICOT question format, but they further see the direct impact that evidence has on nursing practice and appreciate that they can be a part of this effort. The DNP students meet the learning outcomes of implementing translational research in their DNP projects, and also experience their future role of leadership in working with BSN students and the community.

Conclusions: This unique collaboration between DNP students, BSN students, and a clinic serves as a model for future research and quality improvement teams seeking to positively influence the health and wellness of their communities.

COMMUNITY NURSING LEARNING AND EDUCATION

Employment and Retention of Nurses Who Completed an Internship and Residency Program

*Stephen H. A. Hernandez, PhD, RN
Associate Professor, College of Nursing
University of New Mexico
Albuquerque, NM*

*Marisa A. Francis, MSN, RN, CNE, CLC
Senior Lecturer, College of Nursing
University of New Mexico
Albuquerque, NM*

*Donna Winn, MSN, RN
Nurse Manager, RN Residency Department
University of New Mexico
Albuquerque, NM*

Purposes/Aims: The purpose of this study was to (a) determine one and five-year retention rates of registered nurses (RNs) who participated in both the University of New Mexico (UNM) College of Nursing (CoN) Nurse Intern program and the UNM Hospital (UNMH) Nursing Residency Program (NRP), and (b) determine if one and five-year retention rates of RNs who participated in the CoN Nurse Intern/UNMH NRP differed based upon demographic characteristics.

Background: The UNM CoN Nurse Intern program was implemented in 2004 and the UNMH NRP began in 2002. Students in the CoN's Bachelor of Science in Nursing (BSN) program join the Nurse Intern program by applying for and being hired as an Intern at UNMH. In the beginning of the program, students enroll in NURS 421. Once students graduate and are employed by UNMH, they are required to complete the NRP to assist their transition to practice. The goal of the NRP is to support newly hired RNs and increase satisfaction while reducing turnover. Although the NRP is an evidenced based program, no formal evaluation has been undertaken to determine if the UNM CoN Nurse Intern/UNMH NRP is effective in increasing RN retention.

Methods: After institutional review board approval, a review and analysis of existing data was completed. Potential subjects were identified from academic records using an existing list of students who were enrolled in NURS 421 from 2008 to 2017. Demographic characteristics were obtained from student records at the CoN. Then, a list of former students' university IDs was submitted to the UNMH Human Resources department to determine if these students had been employed by UNMH, and if so, determine their dates of employment, locations of employment at years one and five (as applicable), and dates of separation. An analysis of demographic characteristics was completed using descriptive statistics, and differences between groups was assessed with Chi-Square tests.

Results: Of 472 former CoN interns, 85.6% ($n=404$) were hired by UNMH. The majority were ≤ 34 years old (18-24=56.4%; 25-34=30.4%) and female (84.2%). Most interns hired by UNMH were white (51.5%) or Hispanic (35.4%). After one year, 341 (84.4%) continued their employment at UNMH. Demographic characteristics of those employed for one year were similar to those hired by UNMH (age $\leq 34=86.9\%$, female=84.2%, white=51.5%, Hispanic=35.4%). Of those who could potentially have been employed for five years ($n=203$), 43.3% ($n=88$) remained employed at UNMH. The majority of those employed by UNMH for five years were ≤ 34 years old (84.7%), female (86.2%), and white (51.2%) or Hispanic (35.5%). There were no significant differences in initial, one-year, and five-year employment based upon age, gender, or race and ethnicity.

Implications: It is evident that the intern program is an effective method to recruit graduate nurses. The intern program provides students with work experience and nursing knowledge and skills that enrich their future career while also providing a source of income. UNMH enjoys more experienced graduate nurses and increased employee retention by hiring these former interns.

COMMUNITY NURSING LEARNING AND EDUCATION

Emergency Department Nurses Perceived Competence in Disaster Preparedness

Christie Meredith, RN, BSN
Master of Science Leadership Student
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA

Jessica E. Draughton Moret, PhD, RN
Assistant Professor of Clinical Nursing
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA

Purposes/Aims: The aim of this study was to determine the perceived competence of Emergency Department (ED) registered nurses at a Level I trauma center in disaster preparedness and response.

Background: The increasing incidence of disasters emphasizes the need for registered nurses to be adequately educated in emergency preparedness. The need for adequate education for registered nurses working in large trauma centers is essential in reducing the negative consequences of those affected by these crises and reducing the risk of exposure to themselves and the affected population. The literature shows that nurses do not feel competent in their abilities to manage a disaster and a resultant surge of patients. A determination of the current level of nurses' disaster preparedness is critical in aiding the development of educational curriculum and improving competency.

Methods: This study used a quantitative, cross-sectional design to explore current perceptions of ED nurses regarding disaster preparedness. The Emergency Preparedness Information Questionnaire (EPIQ) was used to assess emergency preparedness competency. The EPIQ is a valid and reliable tool comprised of 44 self-report questions using a Likert type scale (Cronbach's $\alpha=0.97$). An average score was calculated from each of the 8 EPIQ dimensions. Descriptive statistics were used to analyze the demographic data.

Results: Of the 100 nurses queried, 43 responded (43% response rate). The majority of nurses ($n=24$, 56%) had more than ten years of experience as an RN, were employed full-time ($n=37$, 86%), and had a BSN degree ($n=28$, 65%). In terms of emergency preparedness experience, 19 (44%) had 1-5 years of experience in the emergency department, 30 (70%) were not a member of any emergency volunteer organization, 35 (81%) reported no previous experience with a disaster ($n=35$, 81%), and all but one, ($n=42$, 98%) had recently completed a disaster preparedness course provided and required by their department. Results showed that nurses felt most familiar with triage and basic first aid ($M=3.9$, $SD=0.916$) and felt least familiar with the category of detection ($M=2.7$, $SD=1.08$) encompassing recognition of health sequelae from harmful exposures. No subcategory received a median score of 5 (very familiar), nor a mean greater than 3.9 indicating a low to neutral familiarity of emergency preparedness.

Implications for Translation to Practice/Further Research: As the number of disasters continues to climb, hospitals may be at risk for being unprepared to respond effectively. Findings from this study suggest that although nurses feel competent in some dimensions of emergency preparedness, further curriculum development is necessary to facilitate a comprehensive understanding of disaster response. The results from this study provide a framework to tailor future educational offerings in order to address nurse reported gaps in perceived emergency preparedness competency.

COMMUNITY NURSING LEARNING AND EDUCATION

Assessment of Associate Degree Nurses' Ethical Knowledge

Annie Huynh, DNP, FNPC, PHN, CNOR, RN, Assistant Professor

Heidi He, DNP, FNPC, Assistant Professor

Kathleen Gilchrist, PhD, FNP, PHN, RN, Professor Emeritus

Nursing Department

California State University, Bakersfield

Purpose: Exploration of RN-BSN (Registered Nurse to Bachelor of Science in Nursing) students' knowledge and perceptions of healthcare ethics.

Background: Ethics is an integral part of the healthcare profession utilizing a systematic approach to understand, analyze and distinguish matters of right and wrong, good and bad. "Most Americans polled (82 %) describe nurses' ethics as high or very high." Many nurses encounter morally distressing situations every day. Associate degree nurses have graduated from programs often with an intense curriculum with a focus on preparatory nursing skills to function at an entry level. According to DeSimone, "Few nursing curricula offer a course dedicated exclusively to ethical decision making." Nurses often develop critical thinking skills when evaluating ethical situations during work. Nurses may only have the knowledge they gained from their experiences in work settings. The results of this study have assisted in planning a new successful ethics course for ADN-BSN students.

Methodology: A quantitative, descriptive, exploratory design was utilized. A researcher developed, 20-question survey was e-mailed to all RN-BSN students prior to beginning an on-line ethical course in the summer of 2017 & 2018 through SurveyMonkey®. Data were downloaded by the researchers and analyzed.

Results: A total of 106 subjects were emailed and 60% responded. Eighty-seven percent were female and 89% of the subjects had practiced nursing less than five years, mainly in the hospital setting. Over 73% ranged in age from 26 to 45 years old. Sixty-eight percent of the subjects noted they had received some form of healthcare ethics training in their Associate Degree Nursing program. However, 16% were unsatisfied with their previous healthcare ethics training; over 90% expressed interest in receiving more training. More than 92% of the nurses reported encountering ethically challenging situations in their work. Yet, 68.8% believed they had come across morally distressing situations. Only four nurses had been subpoenaed to testify regarding patient care. RN-BSN students had a difficult time with a question concerning the difference between ethics and values (50% correct). More than half (62.5%) of the nurses read the American Nurses Association (ANA) Code of Ethics and sadly 25% had never read the California Nursing Practice Act.

Nursing Implications: ANA's Code of Ethics (2015) is a valuable document for all nurses to read and understand. It is the foundation of ethical decision making. Moreover, knowledge of the state Nurse Practice Act is crucial for nurses to make sound, appropriate ethical decisions in each state. Results indicate that ADN nurses may have had some ethical training, but that they wanted more education. Future educational interventions can be generated with this knowledge to further prepare and assist ADN nurses to deal with ethically challenging situations.

COMMUNITY NURSING LEARNING AND EDUCATION

Exploring Chinese College Students' HPV Awareness, Attitudes, and Vaccination Intent

Calli J. Astroth, Undergraduate Honors Nursing Student
Angela Chia-Chen Chen, PhD, RN, PMHNP, Associate Professor
Elizabeth Reifsnider, PhD, RN, WHNP, PHCNS-BC, FAAN, Associate Dean for Research
College of Nursing and Health Innovation
Arizona State University
Phoenix, AZ

Purposes/Aims: This qualitative research is aimed at exploring Chinese college students' awareness, attitudes, and beliefs of Human Papillomavirus (HPV) and factors contributing to their vaccination intent.

Background: HPV infections are the most common sexually transmitted infections worldwide. Empirical evidence suggests that HPV has contributed to multiple cancers and genital warts in females and males. It is estimated that cervical cancers kill an estimated 30,000 people in China every year (Gu et al., 2015). The instance of cervical cancer in China continues to grow an estimated 2-3 percent annually (Gu, et al., 2015). Just recently in 2016, two HPV vaccines were released in China; however previous studies have shown vast knowledge deficits of the infection among rural, metropolitan, and university populations (Chen et al., 2018; Li et al., 2016). As college students can be infected with HPV through risky sexual behaviors, their awareness of the risk of HPV infections and behaviors contributing to the infection and importance of vaccination are crucial to minimize morbidity, mortality and social cost from HPV-related cancers and diseases.

Methods: We used a focus groups method to gain a deeper understanding of Chinese college students' awareness, attitudes and beliefs of HPV and factors contributing to their intent of vaccine uptake. We purposely separated the focus groups by biological sex as HPV and sexual behaviors are very sensitive topics to discuss in the group format. IRB approval was received prior to conducting the research. A total of 20 female and 20 male college students participated in the focus groups; 10 in each group. After we explained the purpose, procedure and the potential risks and benefits of participation and obtained written consents from participants, participants filled out a brief form including demographics, health history and a 10-item HPV knowledge scale. All survey questions were validated in our prior research. One bilingual (English/Chinese) researcher with extensive experience working with the target population led the focus groups discussion. Another researcher observed the interactions between members in the group and took notes. Each focus groups discussion lasted about one hour. We audiotaped discussions with permission. Participants received a small gift at the end to acknowledge their invaluable time and effort. We will conduct descriptive statistics to describe key variables in the survey. For the focus groups interviews, one bilingual researcher will transcribe the data from audiotapes and translate the Chinese transcripts into English. Focus groups data will be analyzed based on Downe-Wamboldt's inductive content analysis method.

Results: We are currently analyzing data and plan to complete it by January 2019.

Implications: The results from this study will inform Chinese college students' awareness, attitudes and beliefs of HPV and factors influencing their intent of vaccination. Culturally and linguistically congruent interventions that address these key factors will be needed to promote vaccination behavior and consequently prevent HPV-related cancers.

COMMUNITY NURSING LEARNING AND EDUCATION

Investigating Child Abuse: Examining the Resources of Multidisciplinary Teams

Savannah Carter
Student Nurse
School of Nursing
Boise State University
Boise, ID

Max Veltman, PhD, RN,
CPNP-PC
Associate Professor
School of Nursing
Boise State University
Boise, ID

Tamara Pittz
Chapter Director
INCAC
Nampa Family Justice Center
Nampa, ID

Karen Godard, DNP, APRN,
CPNP
Associate Professor
School of Nursing
Boise State University
Boise, ID

Purpose: The aim of this study was to gather information about the educational needs and resources available to Child Abuse Multidisciplinary teams (MDTs) in the state of Idaho.

Background: A lack of coordination and communication between agencies investigating reports of child abuse may cause a delay in removing children from dangerous situations and/or continued abuse. MDTs promote teamwork between a variety of disciplines to improve child abuse investigations, respond to the needs of children and families, and bring justice to the victims. Idaho law states that the prosecuting attorney in each county must develop an interagency multidisciplinary team for the investigation of child abuse and neglect within their county. The teams must include professionals from specified professions necessary to the investigation. Medical evaluations are an integral part of investigating child abuse as well as helping the child's physical and psychological healing. Assessing each county's MDT and their partnerships allows the Idaho Network of Children's Advocacy Centers (INCAC) to identify strengths and areas for improvement in providing focused training and discussing vital resource allocation.

Methods: A telephone survey was designed and conducted gathering information from county officials, usually at the prosecuting attorney's office, in each of the 44 counties in Idaho. This survey explored educational needs, current functioning capacity and the involvement of medical professionals in MDT operations. Over the course of several weeks, data were collected, organized, and analyzed with comparisons to state codes, national standards and best practices. Additionally, free training opportunities and development tools, were discussed with participants based on their immediate assessed needs.

Outcomes Achieved: Data analysis indicates that eight of the 44 counties in Idaho have MDTs that are compliant with the statute. When asked, "Is there anything your team needs to help it improve?" eleven counties felt fully confident in their team. Only 15 counties have input from medical professionals on cases of child maltreatment. Four counties had no knowledge of the statute or the existence of MDTs. Every county expressed interest in training events for the members of their MDT. The status of the MDTs will be published in a comprehensive report to better understand the needs of Idaho's child abuse investigation teams and the availability of medical professionals.

Conclusions: Efficient, well-trained teams increase the ability to prosecute child abuse in a timely manner as well as minimizing additional trauma to children and the lifelong complications of abuse. This study indicates that Idaho county prosecutors need more training for members of their MDTs and most MDTs need much more collaboration with medical professionals. This study also assists INCAC to focus educational content towards underdeveloped MDTs and identify those counties with limited medical service involvement in child abuse investigations. Prosecuting attorneys in Idaho now have additional access to education and networking opportunities. This study adds to the knowledge these professionals require to arrange necessary training events specific to their teams, increase the effectiveness of their MDTs and thus improve outcomes for children suffering from maltreatment.

Abstracts of Poster Presentations

DIABETES

DIABETES

Improving Diabetes Care in a Nurse Practitioner Led Clinic: A QI Project

*Tarnia Newton, DNP, FNP-C
DNP Student
Frontier Nursing University
Hyden, KY*

Aim: The aim of this quality improvement project was to improve the percentage of diabetic patients receiving standardized, appropriate diabetic care to 90% over 90 days.

Background: People with diabetes are at higher risk for heart disease, stroke, blindness, kidney failure, extremity amputations. Diabetes and its complications, deaths, and societal costs have a huge and rapidly growing impact on the United States.

Rationale: Prior to this project, no standard routine best practices were followed for diabetic patients at this chaotic clinic. Consequently, diabetic patients were receiving sub-optimal care. A chart audit of diabetic patients showed a significant gap in care, with 75% of patients having a Glycated Hemoglobin (HbA1C) of more than 8%, 25% having inadequate blood pressure control, and 100% had one or more preventative care measures not completed.

Methods: A rapid cycle quality improvement model was used with four two-week Plan-Do-Study-Act (PDSA) cycles. Iterative tests of change (TOC) were used to improve team confidence, patient engagement, diabetes care measures, and preventive care referrals. Test interventions of change (TOC) were introduced every two weeks for four PDSA cycles in the four areas of concentration: team engagement, patient engagement, diabetic care measure checklist, and preventative care referrals. This project utilized four process measures to determine what interventions were performed as planned to affect the five outcome measures. The five outcome measures included the team member's scores on the survey, the number of patients empowered to make goals, the mean score of the completed Diabetes Care Measure Checklist (DCMC), the mean score of the DCMC captured in the EMR, and the number of patients referred. Operational definitions were established for each TOC to prevent ambiguity. Data were collected and analyzed using run charts, chart audits, and surveys.

Interventions: Primary interventions included education sessions, team meetings, morning huddles, patient engagement tool to empower diabetic patients to make goals, diabetic care measure checklist utilization, and preventative care referrals.

Outcomes Achieved/Documented: Final results for PDSA cycle four demonstrated 91.25% of patients received standardized, appropriate diabetic care an improvement from 27%, team confidence increasing to 4.5 on a Likert scale from 2.5, diabetic patients empowered to create goals 84% improving from 33%, diabetes care measures reviewed via checklist 92% of the time improving from 39%. Definitely, demonstrating an improvement of diabetic patients receiving standardized, appropriate diabetic care. Team engagement played a crucial role in this QI project.

Conclusions: Despite the numerous challenges along the way, this QI project improved patient-centered standardized, diabetes care in this chaotic practice. The lessons learned can be used at other clinics to help with individual support, screening and preventative care measures, improving diabetic patient clinical outcomes. Factors promoting the success of this project included seeking out new processes, ideas, and support from team members who, in turn, learned that team dynamics and cohesiveness are paramount in a QI project. The major success of this project was the process of change affecting the overall team with improved cohesiveness, confidence, and communication, thus resulting in improved diabetes patient care.

DIABETES

Importance of Diabetes Prevention Programs in High Risk Communities: The ‘Y Effect’

*Andrea Moore, BSN
RN, WHCNP-BC DNP FNP Student
Department of Nursing
Pacific Lutheran University
Tacoma, WA*

Background: The Young Men’s Christian Association (YMCA) Diabetes Prevention Program (DPP) is a program instituted for the management of individuals with risk factors in becoming a type 2 diabetic. The program is designed to promote a 7% weight loss and increased physical activity for the recommended 150 minutes per week. Type 2 diabetes has significant comorbidities associated with the disease, such as increased risk of heart disease, stroke, neuropathy and retinopathy, which can lead to blindness and loss of limbs or extremities. Individuals who participate in this program must meet specific criteria set forth by American Diabetes Association (ADA). Adults 18 years or older, a BMI $\geq 25\%$, (if Asian, a BMI $\geq 22\%$), a fasting blood glucose ≥ 100 mg/dL and < 126 mg/dL, or an elevated hemoglobin A1c of 5.7%-6.4%, and women with history of gestational diabetes. The YMCA’s DPP is an established program in the local area designed to assist high risk individuals in decreasing their risk for developing type 2 diabetes. Participants who complete a full year have had the best outcomes and the best long-term success. This program offers at-risk communities a structured, group-base program that educates participants on nutrition, diet, weight control, and a safe place to exercise within a supportive environment.

Purpose: The purpose of this project is to provide education to enhance awareness of the YMCA’s DPP for health care providers and their patients at risk for Type 2 diabetes, in order to decrease rates of diabetes in the local community.

Methods:

AIM 1: Establish awareness benchmark of YMCA’s DPP E-referral process. An evaluation of the effectiveness of this education initiative about the YMCA’s DPP will be accomplished by working with a local medical partner health system, to engage health care providers in a pre-survey, which will evaluate their understanding of prediabetes and knowledge of the local YMCA’s Diabetes Prevention Program. The survey will also include baseline understanding of the E-referral. The survey will also assess barriers to providers referring patients to the YMCA’s DPP. A post-survey will be implemented after education has been delivered, no later than 4-6 months after educating the providers, to assess if there is an increase in patient referrals.

AIM 2: Retrospective evaluation of YMCA’s DPP program participants. Participants will be selected from the YMCA’s DPP EHR who were referred by a health care provider meeting the ADA criteria. A retrospective survey will be given to participants who have completed the one-year requirement of the YMCA’s DPP, in order to evaluate the effectiveness of program from the participants’ perspective.

Results: The outcome and data of this project will be presented as the surveys are completed and hopes to show the effectiveness of the YMCA DPP in local communities and set a precedence for surrounding areas.

Conclusions/Implication: Conclusions have not yet identified. Early referral to a Diabetes Prevention Program could serve high-risk individuals in underserved communities. This is a proactive approach to combating the growing epidemic of type 2 diabetes.

DIABETES

Integrating Coached Care into Shared Medical Appointment in Adults with Type 2 Diabetes

*Janett Hildebrand, PhD, FNP-BC, CDE
Sue and Bill Gross School of Nursing
University of California, Irvine
Irvine, CA*

Aims: This 3-month pilot study examined the feasibility of integrating shared medical appointment (SMA) with coached care (SMA-CC) in adult Latino participants with type 2 diabetes (T2DM). The central hypothesis is that an integrative approach such as SMA-CC can provide support for self-care goals that result in improved clinical outcomes for individuals and their families.

Background: Shared medical appointments bring peer groups of patients with similar diagnoses to a single appointment with a health care provider (HCP) to facilitate a supportive clinical and social environment. Studies show that SMA improves glycosylated hemoglobin (A1C), blood pressure, self-management behaviors and self-efficacy. Coached care provides self-management support, bridges the patient to the HCP, navigates patients in the health system, offers emotional support and provides continuity in care. This pilot proposed integrating health coaching to span the concepts from the SMA into the daily life of the patient through consistent support. However, there is a paucity of coached care studies in patients with diabetes.

Methods: Participants were randomly assigned to SMA or SMA-CC. The study was conducted at a federally qualified community clinic that serves low income populations with Medicaid Health Plan, Emergency Medicaid or no insurance. Participants were recruited through provider referral and face-to-face contact. All subjects participated in SMA or SMA-CC over three months. The SMA provided an opportunity to facilitate structured diabetes education in a group setting in Spanish. Following the presentation of the material, facilitated discussion focused on goal-setting specific for the topic and individualized to the participant. Time was allotted for participants to share problem-solving techniques they experienced in the past month. During this time, the principal investigator met with any participant that had a specific problem not appropriate for open discussion. The post visit was completed by the principal investigator and included documentation, specialty referral or medication refills. Participants randomized to SMA-CC received follow-up phone calls two weeks after each SMA visit.

Results: Outcome data was measured at baseline and 3 months. Participants (mean age 51.4 ± 8.5 years; HbA1c $10.1 \pm 1.2\%$) were predominantly female (80%). Improvements in glycemic control were similar in both groups (SMA -0.71 ± 0.89 , SMA-CC -1.41 ± 1.57 ; $p = .094$). The change in cholesterol, LDL, HDL, triglycerides, weight, BMI and BP did not differ between groups after 12 weeks ($p > 0.05$).

Conclusions/Implications: Both SMA and SMA-CC resulted in similar improvements in glycemic control. Overall, although both interventions had similar effects in several metabolic risk markers, the SMA-CC had more favorable effects on weight and BMI. This suggests the potential added value of coached care in adult Latinos with type 2 diabetes. The notion of self-care through integrative practices and its importance in diabetes management is gaining acceptance in the US. Health coaches provide a cost-effective continuum of care between medical office visits to encourage participants achieve or revise their goals.

DIABETES

Supporting Self-Management for Persons with Diabetes: What Do Clinicians' Believe?

Julie Peila Gee, PhD, RN
Assistant Professor, School of Nursing
Weber State University
Ogden, UT
juliegee@weber.edu

Dawn Bowker, PhD, RN, ARNP
Clinical Assistant Professor, Nursing
Dept of Food Science & Human Nutrition
Iowa State University
Ames, IA

Purpose: The purpose of this study was to examine the beliefs of clinicians, specifically diabetes educators in the US, about the patient as self-manager of his/her own chronic condition, and how those beliefs relate to the educator-reported self-management support strategies used by educators in clinical encounters. Any relationships between the personal characteristics (age, gender, discipline, work setting, and years worked as an educator) of the educators and their self-management beliefs and support strategies were examined.

Rationale: More than 100 million U.S. adults are living with diabetes or prediabetes underscoring the importance of diabetes educators engaging with and supporting patients as self-managers. Evidence suggests that the behaviors of some clinicians do not align with current health policy and practice guidelines in supporting self-management. Under the Chronic Care Model, the clinicians' role is to understand the challenges that chronically ill patients face and provide them appropriate support. Diabetes educators, clinicians who represent several disciplines—registered nurses, pharmacists, dietitians and others—provide the knowledge, skills, and strategies that persons with diabetes need. They are integral members of the diabetes interdisciplinary care team. Given the importance of the educators' role in empowering and supporting persons with diabetes, coupled with educator's potential influence on effective patient self-managing behaviors made this an important area to study.

Methods: A quantitative, cross-sectional, descriptive, correlational study design was used to assess diabetes educators' (n =225) beliefs towards self-management using the Clinician Support-Patient Activation Measure 13 (CS-PAM). Support strategies were assessed using the Clinician Self-Management Scale (SMS).

Results: The CS-PAM score for diabetes educators ranged from 56.1 to 100.0 with a mean score of 77.7 (the highest in the literature). The SMS scores ranged from 2.44 to 5.00. A significant ($p < .001$) positive relationship was found between educators' beliefs and strategies used to support patients. Educators' beliefs and support strategies used in clinical encounters were significantly correlated. Bivariate analysis and multiple linear regression demonstrated no statistically significant differences in the beliefs of and support strategies used by educators' and their characteristics.

Conclusions: Results indicated that diabetes educators' value patients' participation in their care. The more positive educators' beliefs towards the patients' role in self-management suggests the more likely educators' are to engage with patients using effective support strategies as measured by the SMS. Even though there was no statistically significant differences in the beliefs of and support strategies used by educators' and their characteristics, this suggests clinical significance.

Implications: Diabetes educators, no matter their discipline or other characteristics, not only believe in their patients managing their chronic condition, but also use effective strategies to support them as measured by the SMS. Use of the effective support strategies, can decrease trial and error of behaviors increasing efficiency of care delivery. Educators who score high on the CS-PAM and the SMS can serve as role models and teachers for others who need guidance in learning these skills and applying them to their practice. Diabetes educators may serve as models for other clinicians caring for those who are chronically ill.

DIABETES

Hemoglobin A1c Point-of-Care Testing Implementation in Primary Care

*Angela M. Grant, BSN
Doctor of Nursing Practice Student, College of Nursing
Idaho State University
Pocatello, ID*

*Cathy R. Arvidson, BSN, MSN, PhD
Postdoctoral Certificate in Family Nursing Practice
Associate Professor, College of Nursing
Idaho State University
Pocatello, ID*

Background: Diabetes mellitus is a chronic disease that affects millions of people and costs billions of dollars worldwide. In the care of patients with diabetes mellitus, many clinicians utilize the hemoglobin A1c assay for screening, diagnosing, and managing the disease. This assay is a retrospective calculation of average blood sugar levels over a two to three-month period and can be collected via point-of-care testing or non-point-of-care testing. In successful diabetes mellitus management, patients get their hemoglobin A1c tested two to four times per year and more frequently during pregnancy. In addition, patients with a body mass index equal to or greater than 25 kg/m² are recommended to be screened for diabetes with a method such as the hemoglobin A1c assay. Point-of-care testing provides the clinician with immediate information for the management of the patient.

Aims: The aim of this Doctor of Nursing Practice scholarly project is to determine how hemoglobin A1c point-of-care testing impacts diabetes mellitus management in the primary care setting.

Methods: To meet this aim, hemoglobin A1c point-of-care testing was implemented into clinical practice. Supported by the evidence collected in a literature review, a protocol for utilizing point-of-care testing in clinical practice was created and implemented into a one provider clinic. The collection of data began in August 2018 and will conclude in November 2018. The Iowa Model was utilized to translate the identified evidence into practice and the Normalization Process Theory is being used to determine the success or failure of the implementation, as well as, to evaluate the implementation results (Nilsen, 2015).

Outcomes: Evaluation of the project will be done by measuring two main elements: 1) the impact on clinical decision making related to medication management and 2) the impact on disease outcomes as defined by changes in hemoglobin A1c levels. Secondary measurements include the identification of prediabetes in patients ages 40 to 70 years presenting for wellness exams with a body mass index equal to or greater than 25 kg/m² based on the U.S. Preventive Services Task Force (2015) recommendation and evaluating the implementation of the intervention specific to the one provider clinic.

Conclusion: This project's results will guide the practice change for the clinic and may provide a model for other clinics of similar size for the implementation of hemoglobin A1c point-of-care testing into clinical practice.

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Abstracts of Poster Presentations

EDUCATION ISSUES

EDUCATION ISSUES

Transforming RN to BS Education in Alaska: Engagement in a Rural Environment

Cynthia D. Booher, PhD, RN, CNE

Purposes/Aims: The purpose of this project is to document the process and results involved in the changes made to the RN to BS program in Alaska.

Rationale/Background: The background of this project is that a RN to BS program existed at the University but was not being successful in recruiting students to the program. The challenge was to determine why the program was not successfully recruiting students. The local stakeholders had a desire for the AS degree RNs to progress to the BS level. These provided the locus for significant changes to the existing program.

Undertaking/Best Practice/Approach/Methods/Process: The first step in the process was to identify, from a potential student's perspective, the road blocks (perceived and real) to matriculating into the program. This was accomplished through the use of electronic surveys provided to current AS students and multiple AS prepared nurses. The results of these surveys were then analyzed using a mixed method process. Faculty who are currently working in the RN to BS program were also surveyed and the results analyzed. After this process an ad hoc committee was established to investigate possible changes and develop a change plan which was presented to the School of Nursing administration and the University. This plan, upon approval, was implemented.

Outcomes Achieved/Documented: The first change was to actively recruit students who are early in the AS program. During these recruiting sessions a plan for progression was presented which would help the students progress to the BS level with ease. The second change was to move from a once a year admission and offering each class only once per year to a rolling admission being able to start the program at the Fall, Spring, or Summer term. Also, each course is offered during each term. This allows students to admit when they are ready. Another change was that AS students, who do not have classes during summer session, could begin taking courses in the RN to BS program before completing their AS degree. This allowed them to make better use of their summer break. The classes have also been transitioned from primarily face to face traditional presentation to a more online delivery format.

These changes have resulted in significant growth in the program. In 2016/17 academic year there were 10 students in the program. For the 2018/19 year the program has 42 students enrolled. Completion rates will be determined as available.

Conclusions: By increasing the flexibility of the program, the needs of the students have been met which has allowed the University to better meet the needs of local stakeholders. These results indicate that it is possible to meet the needs of students throughout the state of Alaska for advanced education.

EDUCATION ISSUES

Are There Outcome Differences between NMNEC ADN, BSN, and ADN/BSN Co-Enrolled Students?

Judy Liesveld, PhD, PPCNP-BC, CNE
Professor, College of Nursing
University of New Mexico
Albuquerque, NM

Blake Boursaw, MS
Instructor, College of Nursing
University of New Mexico
Albuquerque, NM

Beth Rodgers, PhD, RN, FAAN
Professor and Chair, School of Nursing
Virginia Commonwealth University
Richmond, VA

Mary Wright, MSN, RN, CNS, CNE
Principal Lecturer I, College of Nursing
University of New Mexico
Albuquerque, NM

Purpose & Aims: The New Mexico Nursing Education Consortium (NMNEC) nursing schools have currently graduated four cohorts of ADN/BSN co-enrolled students who completed the BSN degree from a university while attending classes at a community college site. Several cohorts of traditional ADN and BSN students have also graduated from schools who implemented NMNEC's common statewide curriculum. Our project is demonstrating preliminary outcomes for ADN, BSN, and ADN/BSN students graduating within NMNEC. Our research uses clinical reasoning, professional responsibility/values, and demographic information to measure student outcomes.

Rationale/Background: NMNEC developed a groundbreaking partnership model for universities and community colleges to place the BSN on community college campuses. The NMNEC educational model has three sectors of students: 1. ADN students at community colleges 2. University based-BSN students 3. Community College/University ADN/BSN co-enrolled students based at community college campuses. Features of the model include side-by-side classroom education with the ADN, BSN, and co-enrolled ADN/BSN students.

Methods: This cross-sectional, quantitative study is using in-person, paper-based surveys to administer three key instruments: the Script Concordance Test (SCT) to assess clinical reasoning, the Nurses Professional Values Scale- Revised (NPVS-R) to assess professional identity as a Registered Nurse, and the Academic Motivation Scale (AMS) to provide information regarding motivational factors. Means and standard deviations are calculated for instrument scale and subscale scores and are compared across educational patterns (ADN, co-enrolled ADN/BSN in community college environment, and traditional university-based BSN) using independent samples *t*-tests and ANOVAs. The threshold for statistical significance for all analyses is $\alpha = .05$.

Sample: Data collection is approximately 2/3 complete. A total of 121 surveys were completed in 2017 by NMNEC students in the final term of their nursing programs. Fourteen of these students were enrolled in ADN programs, 67 were enrolled in university-based BSN programs, and 40 were co-enrolled in ADN/BSN programs in a community college.

Results: Compared to students in university-based BSN programs, community college-based students (combined ADN and BSN) did not show statistically significantly different scores on subscales of the Academic Motivation Scale or on the Nurses Professional Values Scale- Revised. Community college-based students did score significantly higher than university-based students on the 0-100 scale of the Script Concordance Test ($M = 69.6, SD = 1.7$ vs. $M = 63.8, SD = 1.6$; $t(114)=2.4, p=.02$) as well as its Human Care Aspects ($M = 64.9, SD = 1.3$ vs. $M = 60.8, SD = 1.2$; $t(114)=2.4, p=.02$) and Therapeutic Relationship ($M = 66.6, SD = 1.2$ vs. $M = 63.3, SD = 1.1$; $t(114)=2.0, p=.05$) subscales, but not its Nursing Activities subscale.

Limitations/Implications: The small number of ADN students limited the possibility of meaningfully comparing those students as a separate group, although exploratory three-group ANOVAs across educational patterns were statistically significant when independent samples *t*-tests were. The Script Concordance Test proved difficult to administer reliably in its full length, and use of a shortened version is planned for future surveys. Our project demonstrates measurement strategies of student outcomes that can be used for other unique models of nursing education.

Funding: NCSBN, R100009

EDUCATION ISSUES

Branding a School of Nursing through Student/Faculty Perceptions of Program Quality

*Anne Stokman, RN, MSN, CDE
Assistant Professor, School of Nursing
California State University, Stanislaus
Turlock, CA*

*Sherri Brown, RN, MSN, CNS
Assistant Professor, School of Nursing
California State University, Stanislaus
Turlock, CA*

*Marla J. Seacrist, RN, PhD
Professor, School of Nursing
California State University, Stanislaus
Turlock, CA*

Purpose: The purpose of this project was to explore the best qualities of the School of Nursing, from the views of both students and faculty, for the purpose of branding our school.

Background: Building a brand is a long process of establishing relationships with customers. Branding is defined by the overall perception of your organization. For a School of Nursing, customer perceptions include the experiences of both students and faculty. Although some view the process of branding your school as a marketing strategy, our purpose was more for public awareness of the quality of our programs and our employment.

Methods: The first step in the branding process was to survey students for their perceptions of the quality elements in the School of Nursing. Students from two Pre-licensure programs at our university were asked to complete a 10 question anonymous SurveyMonkey with open ended responses. Questions centered on the strengths of the program, what our program should be known for, and why they chose our school. We also asked faculty what they felt was the best thing about the program through anonymous SurveyMonkey. Both student and faculty responses were analyzed thematically. Comparisons were made between the themes and the current School of Nursing mission and goals statement.

Outcome: Students chose our school because it was close to home, offered a Bachelor's degree, and had excellent NCLEX pass rates. Students felt that the top strength of the program was dedicated, quality faculty. Other strengths were the preparation for NCLEX and strong relationships with clinical placement sites. When asked what we should be known for, students felt that they left the program being critical thinkers, were compassionate, and were very likely to pass their NCLEX exam. Faculty also reported that their commitment and experience were the strength of the program, in addition to student enthusiasm. The findings were compared to the current mission statement and were found to be well represented and consistent with the mission and goals of the school. Based on these findings, our new tag line incorporates who we are, what we offer, and why you should care. Tagline: We are a local rural community based nursing program that offers a high quality education with small classes and exceptional NCLEX pass rates, to provide our local agencies with highly prepared bachelor degree nurses. We also updated our webpage to highlight the quality faculty and added our tagline. We also shared the survey results and branding with our community partners at our annual advisory board meeting.

Implications: Recruiting quality faculty is just one of the reasons our school chose to undergo the process of branding. Efforts to create a brand for our school of nursing, with input from students and faculty, helped to create a more singular vision for our school and a more accurate version of what both students and faculty experience. Using the tag line on our webpage and other marketing documents have expanded the public awareness of our unique qualities.

EDUCATION ISSUES

Exploring the High Turnover Rate in Washington Community College Nursing Directors

*Sarah Bear, EdD, MSN, RN
Academic Nursing Program Director
Health and Community Studies Department
Western Washington University
Bellingham, WA*

Background: Within Washington State, 55% of community and technical college (CTC) nursing programs had up four directors in the four year period between 2011 and 2014 (NCQAC, 2015). This trend has continued with a 47% turnover rate fall 2018. Understanding factors influencing turnover is essential to support nursing program quality and stability such as NCLEX pass rates. One example of the issue is a nursing program with three directors in four years experiencing an NCLEX pass rate decline from 91% to 79%. Anecdotal conversation over the past several years with nursing program directors at various statewide meetings has indicated the high turnover rate can be attributed, at least in part, to organizational pressures such as excessive workload, compensation, clinical placement constraints, and faculty shortages. The perspective of the CTC nursing directors regarding the supports available to them, as well as the supports that were missing was important to explore. This study was undertaken to begin understanding factors that impact the high turnover rates in this population. Specifically, the goals of this study were to describe factors deemed supportive to retention and additional supports needed by nursing directors.

Population, Sample, Method: The selected population for this study was current English speaking deans and directors of associate degree community college nursing programs in Washington State. The population selected consisted of participants employed in public, state-funded community college systems with, at a minimum, an associate degree nursing program. Non-probability convenience sampling was used for this study. A qualitative, grounded theory study was conducted face-to-face interviews with ten nursing deans or directors in community colleges across Washington State.

Results: Themes presented by current nursing directors included a lack of administrative understanding regarding the specific stressors of nursing program directors such as clinical placement constraints, lack of qualified faculty, and oversight of students in a healthcare practice setting; heavy workload and inadequate compensation; and lack of orientation to the organizational structure and the role. Nursing directors described having adequate resources such as simulation labs as supportive to retention as well as the positive feelings from strong social and colleague support.

Conclusion: Future practices across the state should support innovative programs focused on educating CTC administrators to the unique needs of nursing along with structured orientation programs to be developed with input from seasoned nursing program directors. Strategies addressing the nursing faculty shortage and compensation issues and support for peer engagement need to be developed and supported.

EDUCATION ISSUES

Faculty Connect: An Ongoing Learning Community Supporting New Faculty

Elizabeth Predeger, RN, PhD

Professor Emerita

School of Nursing

University of Alaska Anchorage

Heather Nice, MLIS, BA

Instructional Designer

School of Nursing

University of Alaska Anchorage

Background: New faculty enter the academic setting as clinical experts, and slowly transition into the world of academia as novice educators. This role follows a unique developmental path as they find their balance as teachers, clinicians, advisors and academics.

Purpose: This innovative demonstration project was designed to help newly hired faculty embrace the transition through involvement in a shared learning community, facilitated by a seasoned faculty member and instructional designer.

Method: A shared learning community, titled: *Faculty Connect* was designed as an ongoing model to address areas deemed important to new faculty. The model incorporates an onboarding orientation, assigned mentors, relevant readings for discussion, and bi-monthly group meetings to address issues of concerns and share resources. All takes place real time and online via ZOOM for those out of the greater Anchorage area.

Outcomes to Date: This innovation for new faculty has been well received in year one. Currently continuing to evolve in year two with new faculty, changes are now being implemented from previous participants. A new faculty group brings new energy that is also additive, moving us toward becoming a sustainable force for retention in the School of Nursing.

Conclusion: As *Faculty Connect* continues to unfold in year two, we strive to support the newest in our ranks, creating connections, support, and giving seasoned faculty an opportunity to “pay it forward”. Ongoing assessment continues.

EDUCATION ISSUES

Ethics in Nursing Education: Innovations in Baccalaureate and Graduate Curricula

Heidi A. Monroe, PhD, RN, CPN
Assistant Professor
School of Health Sciences
Seattle Pacific University
Seattle, WA
monroh@spu.edu

Purpose: The purpose of this poster is to describe curricular innovations to teach nursing ethics. This will provide nursing educators and administrators with pedagogical ideas and curricular tools to promote strong professional values among students at both the undergraduate and graduate levels.

Rationale: Nursing's code of ethics is a foundational component of professional values education, both for students in pre-licensure and in graduate nursing programs. The experiences and backgrounds of these students vary greatly, and the educator must use novel approaches to address content with regard for these differences.

Undertaking: In the undergraduate nursing curriculum at one university, faculty teach the nursing code of ethics across both years and content is interspersed in the coursework as is typical in pre-licensure programs; however, nursing students additionally may choose a nursing bioethics elective course in order to delve deeper into nursing's professional values. Faculty arrange content by five areas of lifespan topics, and guest speakers with content expertise join the faculty and undergraduate students for Socratic-seminar style discussions. Graduate students have a required ethics course embedded in the master's and doctoral nursing curricula, co-taught by nursing and theology faculty. The experienced nurses in the graduate cohorts bring real-life experiences to weekly topical sessions, and connect them to personal and professional values. Faculty arrange class sessions and assignments to capitalize on the experiences of these advanced practice nursing students.

Outcomes: Student feedback via standardized university course evaluations suggest high levels of engagement and effective learning. Faculty feedback suggests students attain new skills and deeper internalization of professional values. Students at both levels are able to engage in complex ethical discussions and decision-making based on principles from the nursing code of ethics.

Conclusions: The nursing workforce and patients benefit when nurses have strong professional values. Nursing programs can promote deeper engagement of students with the profession's code of ethics through innovative course design. Assessment of courses at the conclusion of each term provided evidence that chosen pedagogical methods supported the course objectives. Students in pre-licensure programs and in graduate programs have different levels of experience in health care, and tailoring the coursework to capitalize on interests and experiences allows students to draw valuable connections. Future opportunities may include investigating the feasibility of inviting graduate students with nursing experience to participate in the undergraduate ethics course as content-area experts or guest speakers. Additionally, research may be done to investigate differences between students taking the standalone ethics courses and those who only have professional values content integrated in their usual nursing courses.

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Moral Distress of NICU Nurses in End-of-Life Care

Soojeong Han, AGNP-BC, RN
Biobehavioral Nursing and Health
Informatics, School of Nursing
University of Washington, Seattle, WA

Sujeong Kim, PhD, RN
Assistant Professor
College of Nursing
Seattle University, Seattle, WA

Purpose: This study aims to describe nurses' experience of moral distress when providing end-of-life care for infants and their families in the Neonatal intensive care unit (NICU).

Background: The infant mortality rate is one of the most important indicators that shows a population health of the country. In South Korea, the infant mortality rate has decreased over the last five decades, but the survival rate of infants is still lower than that of Japan and the United States. NICU nurses frequently experience the death of pediatric patients and related moral distress while providing end-of-life care for infants and their families. Moral distress refers to a psychological response to morally challenging situations including moral constraint or moral conflict. While moral constraint occurs when an individual knows but is unable to pursue the right course of action, moral conflict is a situation where moral values clash within multiple individuals. Although nurses' moral distress may lead to negative outcomes such as their burnout and turnover, there is a lack of research about this issue.

Methods: This is a secondary analysis study using the qualitative data collected from twenty nurses working in two neonatal intensive care units in Seoul, Korea. Guided by Corley's theory of moral distress (Corley, 2002) and conceptual definitions defined from previous literatures (Fourie, 2015; McCarthy & Gastmans, 2015), the nurses' relevant experiences were assessed. Conventional content analysis was performed to develop a codebook by encompassing the contexts of nurses' experience of moral distress and identify themes regarding the contents.

Results: The preliminary results were developed based on the analysis of interviews. Moral distress occurred when a nurse encounters a situation of moral constraint or moral conflict, or both. Themes were divided into two kinds of moral constraints: internal and external. Internal moral constraints were related to a nurse's incompetence due to a lack of knowledge, experience and training as well as different perception towards quality end-of-life care. External moral constraints were related to environmental factors including limited spaces, parents' religious and/or cultural beliefs, sudden changes of a patient's condition, and visiting policy that limited siblings' visit. Themes of moral conflict were found where two different values were incompatible between two individuals as well as between individuals and system: 1) infants versus parents and nurses; 2) parents versus nurses; 3) parents versus infants; 4) family members versus system; and 5) a nurse versus another nurse(s).

Conclusions and Implications: By describing the perspectives of the participants, the study provided detailed information of NICU nurses' experiences of moral distress arising from providing care for dying infants and their families. The situations causing the most moral distress were when nurses lacked knowledge about end-of-life care and when a nurse had to practice given a limited, uncontrollable environment regardless of what they wished to pursue. The results of this study emphasize the importance of education for NICU nurses. In addition, moral distress can be alleviated by inviting nurses to a decision-making process.

Funding: Dean's Seed Grant, College of Nursing, Seattle University

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Live Hospice Discharge: Outliving Hospice Eligibility

Margaret F. Clayton, PhD, APRN, Professor, College of Nursing
Eli Jacob, PhD, Research Associate, College of Nursing
Katherine Supiano, PhD, FGSA, Associate Professor, College of Nursing
Michael Caserta, PhD, FGSA, Professor, College of Nursing
Hollie Fuhrmann, PhD, Research Associate, College of Nursing
Rebecca Utz, PhD, FGSA, Associate Professor, Sociology
Jackie Eaton, PhD, Assistant Professor, College of Nursing
Gail Towsley, PhD, Associate Professor, College of Nursing
Kara Dassel, PhD, FGSA, Associate Professor, College of Nursing

University of Utah, Salt Lake City, UT

Purpose: This study explores an extremely understudied event - live hospice discharge, defined as when hospice patients outlive their hospice eligibility. Live hospice discharge is often unexpected by caregivers and patients who have recently accepted impending patient death, thereby creating intense patient and family emotions about continued and unexpected patient life, and the unanticipated removal of supportive resources. The purpose of this study was to assess statewide prevalence of live hospice discharge for the previous 5 years. A secondary purpose was to explore hospice staff and caregiver experiences with live hospice patient discharge.

Background: Recent reports using medical record data suggest that the prevalence of live hospice discharge may be increasing, with estimates that 1 in 5 hospice patients are discharged alive, although variation exists based on location and type of hospice. Previous research suggests patients and their families experience feelings of guilt from not dying, abandonment, loss of security, anger, uncertainty, and frustration. Hospice team members may experience a range of feelings related to discontinuing services for patients with whom they have developed intense supportive relationships.

Methods: Working with a single multisite hospice agency we obtained retrospective data from their 9 regional service areas reflecting both rural and urban locations, conducting a retrospective review of aggregate data on the prevalence and type of discharge from 2013-2017. Data included admitting and discharge diagnoses, average length of service, gender, age, payer type, and reasons for discharge (death at home, death in facility, revoked/live discharge, and transferred to general inpatient care). Interviews with hospice staff and caregivers were conducted.

Results: During this 5 year period, 5,648 hospice admissions occurred; of these 795 patients were discharged alive from hospice care across this agency's nine statewide hospice sites. The most prevalent admitting diagnoses were cancer (43%), dementia (22%), and cardiac conditions (14%). Additional admitting diagnoses included pulmonary, renal, and malnutrition. Live discharge diagnoses included dementia, cancer, and heart failure, accounting for 10-14% of total discharges across the previous 5 years. As expected, there was geographic variation with urban sites admitting and discharging more patients than smaller rural sites due to population demographics. Gender was balanced among patients, with 75% insured by Medicare. Hospice administrators stated they try to minimize the impact of live patient discharge by transitioning patients who have outlived their hospice eligibility into a more general homecare type of service, thus maintaining continuity of care as much as possible.

Implications for Translation to Practice/Further Research: To understand how patients and families adjust to palliative and end of life care, the experience of live hospice discharge must be considered in tandem with ways to minimize the impact of this unexpected event. Clear explanations of eligibility for services at hospice admission, and collaboration between families and the hospice interdisciplinary team about future plans should a patient outlive hospice eligibility can foster supportive caring relationships between nurses, patients and their families in addition to facilitating continuity of care.

Funding: Consortium for Families and Health Research (C-FAHR). Transitions RITe group College of Nursing

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Futility in Critical Care

*Starr Tomlinson, RN, ACNP-BC
PhD Student
College of Nursing
University of New Mexico
Albuquerque, NM*

Purpose: Despite a rich discussion in the literature, the concept of futility remains very ambiguous due to a lack of consensus within the medical community and a proliferation of competing definitions. This ambiguity has led to a multitude of ethical dilemmas in end of life situations, which have become commonplace in the intensive care unit (ICU). As a result, the aim of this paper is to provide a comprehensive concept analysis of the core principles behind futility in the adult ICU setting in an attempt to provide much needed clarity and consistency that can be utilized when encountering ethical dilemmas.

Definition of Concept: The concept of medical futility dates back to the time of Hippocrates, who advised that treatment should be denied to those who were “over-mastered” by their disease. Throughout its history, the concept of futility has been approached from many angles but it has remained an elusive and controversial phenomenon due its subjective and value laden nature. Stated simply, medical futility is present when life sustaining interventions and treatments provide no benefit to a patient and thus should not be continued.

Concept Analysis Approach: In order to analyze the concept of futility, Walker and Avant’s eight-step framework was utilized. Twenty-five articles were found in the PubMed, CINAHL, and PsychINFO databases and were selected for inclusion and analysis.

Implications for Nursing Practice: Because futility remains a pervasive concept in critical care, its continued presence has several implications for nursing practice. Futility disputes often represent a breakdown in communication and trust between patients or surrogate decision makers and healthcare staff, frequently due to a lack of time to forge a relationship in the critical care setting. Misperceptions and lack of education among surrogate decision makers regarding the limitations of ICU care and low likelihood of return to baseline functioning of a patient after a prolonged ICU stay is also frequent. Hence, early, clear, and consistent communication between the healthcare team and family is crucial. In addition, the provision of futile care has been shown to have profound effects upon staff providing care. Numerous sources have confirmed that critical care nurses suffer from moral distress when providing care that they believe is futile or wrong. The significance of these findings have widespread clinical implications, as moral distress can lead to absenteeism, low morale, decreased productivity, and ultimately, burnout. Thus, effort must be made to provide nurses with adequate resources to discuss ethical dilemmas so that conflicts and stressors can be appropriately identified and remedied.

Conclusions: Despite a lack of consensus on the definition of futility, the consequences of futile care are widespread and cannot be ignored. Efforts to enhance communication between healthcare staff and patients or surrogate decision makers must be taken in order to clearly delineate wishes for advanced resuscitation measures. In addition, future research must focus on minimizing moral distress among healthcare staff in order to allow for the continued provision of high quality care.

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Asian Family Caregivers' End-of-Life Cancer Care

*Joosun Shin, MSN Student
BSN, RN, OCN, CHPN
UCLA, School of Nursing
Los Angeles, CA*

*Eunice Lee, PhD, RN, FAAN
Associate Professor
UCLA, School of Nursing
Los Angeles, CA*

*Lynn V. Doering, PhD, RN, FAAN
Professor
UCLA, School of Nursing
Los Angeles, CA*

Background: Terminal cancer often advances rapidly, which makes it challenging for family caregivers (FCs) to cope with end of life (EOL) caregiving for their loved one. Many Asian FCs embrace unique sociocultural values, such as filial piety and family-oriented decision making, which could affect their EOL cancer caregiving. However, how cultural values of Asian FCs affect EOL caregiving is not fully understood.

Purpose: To describe: 1) characteristic of Asian FCs of patients with terminal cancer; and 2) the cultural context that informs the experiences of Asian FCs in the setting of EOL cancer care.

Method: We reviewed primary research articles published in English describing EOL care delivered by Asian FCs to patients with terminal cancer dating from January 2000 to February 2018. We found 61 articles in PubMed, CINAHL, and PsycINFO: 26 more were retrieved from the reference lists of the articles. From the 87 articles, 51 articles that met inclusion and exclusion criteria were selected for this literature review. Results: We classified cancer care literature regarding Asian FCs' experiences into the following nine topics: quality of life, depression, burden, decision-making, coping and resilience, social support, religiosity, self-efficacy, quality of death and dying. Most articles were based on FCs in South Korea, Japan, China, Taiwan, and Singapore, predominantly with studies from South Korea, Japan, and Taiwan. Forty-two articles were observational quantitative studies, including cross-sectional, prospective, and longitudinal studies, with only four randomized controlled trial studies. Five articles were qualitative studies. Asian FCs' depressed moods and burden were negatively correlated with their quality of life. In turn, quality of life was related with the duration and severity of bereavement, including complicated grief, or post-loss depressive symptoms. Our review demonstrated that social support, psychological interventions, and religion are likely to help Asian FCs deal with demanding EOL care. Bereavement symptoms for Asian FCs tended to decrease when they expressed sound understanding of EOL care and terminal symptoms of patients, and when their loved one died at home, not at an acute care hospital. When it comes to decision-making, our review indicated that Asian terminal cancer patients and their FCs may differ in their preferences regarding some aspects of EOL. Specific reported differences were related to timing of the disclosure of terminal cancer diagnosis and to the receptiveness to hospice care.

Conclusions: Asian FCs appear to go through a unique transitional period from hospital-based EOL care to community-based hospice care. Therefore, more EOL care-based studies of Asian FCs in the period of transition are recommended. Culturally sensitive nursing care supporting Asian FCs at the EOL phase, especially focusing on decreasing decisional conflicts between patients and their FCs, and solidifying community-based EOL care, could bring positive outcomes for the FCs.

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How Older Adults Understand the Meaning of Allow Natural Death: A Qualitative Study

*Jodi A. Erickson, BA, MSN, RN, CNL
PhD Candidate*

*M. Louise Fitzpatrick College of Nursing
Villanova University
Villanova, PA*

*Clinical Instructor
School of Nursing
Pacific Lutheran University
Tacoma, WA*

The purpose of the proposed study is to explore the perceptions of older adults (ages 65 and older) regarding the meaning of the terms Allow Natural Death (AND) and Do Not Resuscitate (DNR). Most people do not die where or how they would like to die. Additionally, families may feel anguish and healthcare providers may feel moral distress when witnessing a person undergoing futile interventions prior to death or a person's painful death. Healthcare costs soar with increased interventions often implemented at end of life (EOL). In order for people to die where and how they had envisioned, it is important to discuss EOL wishes early and often, not only when death is looming. While advanced care planning has been encouraged since the 1990s, very few healthcare providers, patients, and families discuss death until death is imminent. The current standard EOL terminology is DNR which focuses on what will not be done as one dies. In the late 1990s, AND was proposed as an alternative term for use in EOL discussions as its focus is what can be done while one is actively dying. The use and impact of AND has been minimally explored in the literature, and EOL considerations continue to be challenging two decades later. In this dissertation, a qualitative descriptive study will be conducted to explore if these two terms are indeed understood differently by older adults. Focus groups consisting of older adults who live independently, are not terminally ill, and have no reported cognitive impairment will provide feedback to semi-structured interview questions. The study is currently in the proposal phase and research will be conducted in mid-2019. Gaining these insights may help patients, families, and medical professionals better determine the best verbiage to use when discussing EOL decisions with elderly patients.

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Integration of Palliative Care in Trauma: Are Patients and Caregivers More Satisfied?

Pamela Bourg, PhD, RN, TCRN, FAEN, Trauma Program Director, Department of Trauma St. Anthony Hospital, Lakewood, CO; Constance McGraw, MPH, Clinical Epidemiologist, Department of Trauma Research, Penrose-St. Francis Hospital St. Anthony Hospital, Colorado Springs, CO and Lakewood, CO; Allen Tanner, II, MD, Director of Trauma Service, Department of Trauma, Penrose-St. Francis Hospital, Colorado Springs, CO; Cecile D'Huyvetter, MSN, RN, Trauma Program Director, Department of Trauma, Penrose-St. Francis Hospital, Colorado Springs, CO; Rebecca Vogel, MD, Attending Trauma Surgeon, Department of Trauma, St. Anthony Hospital, Lakewood, CO

Purpose/Aims: To describe and compare palliative practices and satisfaction with care, before and after implementation of the American College of Surgeons (ACS) Trauma Quality Improvement Program (TQIP) Palliative Care Best Practice Guidelines.

Background: Trauma in older adults often leads to frailty, mortality, long-term disability, and affected family members. There is increasing evidence confirming improved quality of care for patients and family members when palliative care is delivered in parallel to trauma care. Although this evidence exists, there is a paucity of nursing research on integration of palliative care practices within trauma. Prior to November 2017, no palliative care guidelines existed for trauma patients. After November 1, 2017, the ACS recommended that optimal palliative care for trauma patients requires an interdisciplinary team of nurses, physicians, and psychosocial providers.

Methods: Prospective, descriptive, pre-post study of trauma patients (≥ 55 years) and their primary caregivers, before (pre, 11/16-12/17) and after implementation (post, 1/18-7/18) of the ACS TQIP Palliative Care Best Practice Guidelines. Data were collected on palliative care practices and satisfaction across two ACS-verified Level I Trauma Centers. Consented patients and caregivers were administered satisfaction surveys prior to discharge; patients took the Family Satisfaction with Advanced Cancer Care Scale (FAMCARE-P-13), survey, while caregivers took the FAMCARE survey. Pre-group patients were subject to ad-hoc consults, informal family meetings and goals of care discussions, by nurse, patient or family request. Effective 1/1/18, TQIP palliative care guidelines were carried out through a multipronged approach: 1) guideline summaries disseminated in Trauma and Neuro ICU's; 2) physician education; 3) grand rounds on guidelines; 4) morning surgical sign-outs and intentional inclusion of palliative care integration with the trauma team. Post-group patient care included consults ordered early in the patient's stay to assist with advanced care planning, code status, and goals of care discussions. Palliative care practices and mean (SD) patient and caregiver satisfaction overall and by category were compared univariately between pre-and post-groups.

Results: 528 patients and 542 primary caregivers were included (Table 1). There was a significantly higher proportion of both trauma and palliative care team involvement in the post-group for advanced goals of care meetings (13% vs. 50%, $p < 0.001$) and formal family meetings (2% vs. 34%, $p < 0.001$). Mean (SD) patient and caregiver satisfaction were significantly higher in the post-group, compared to the pre-group (Patient: 82% (14%) vs. 87% (14%), $p = 0.001$; Caregiver: 84% (13%) vs. 87 (14%), $p = 0.009$); scores remained significantly higher in the post-group when analyzed by survey category.

Implications: Our study showed more palliative care interventions were ordered in the post-group; palliative and trauma also became more involved working together, with family meetings and goals of care discussions. There was an increase in both patient and family reported satisfaction, in particular, with communication of information, pain and symptom management, availability of nurses, and family meetings held. Understanding the strengths and weaknesses of care through the eyes of the patients and their family members may help nurses better tailor palliative care practices to trauma patients. Future steps include adjusting for facility-specific palliative care practices.

Intervention	Pre-Group, N(%)=302	Post-Group, N(%)=226	P-value
Palliative Care Consult	38 (13%)	77 (34%)	<0.001
Advanced Directive Discussion	260 (86%)	205 (91%)	0.11
Proxy Assignment	271 (90%)	223 (99%)	<0.001
Prognostication Screening	104 (34%)	206 (92%)	<0.001
Frailty Assessment (includes scoring)	25 (8%)	50 (22%)	<0.001
Formal Family Meeting	51 (17%)	170 (75%)	<0.001
Advanced Goals of Care Discussion	197 (65%)	144 (64%)	0.72
Spiritual Care Support	83 (23%)	84 (37%)	0.02

**ENGAGING THE COMPLEX NURSING
WORKFORCE: STRATEGIES FOR SUCCESS**

ENGAGING THE COMPLEX NURSING WORKFORCE: STRATEGIES FOR SUCCESS

Overview: Engaging the Complex Nursing Workforce: Strategies for Success

*Barbara L. Wilson, PhD, RN
Interim Dean and Associate Professor
University of Utah
College of Nursing
Salt Lake City, UT*

Few issues in the healthcare workforce are as alarming as the impending nursing shortage, which is anticipated to exceed one million registered nurses (RNs) in the United States (US) by 2022. Nurses comprise the single largest segment of the healthcare workforce. They also spend more time than any other healthcare profession in the delivery of direct patient care. Peter Buerhaus, a nurse and healthcare economist, found that greater than 75% of RNs think that the nursing shortage presents a significant problem for the quality of their work, the quality of patient care, and the amount of time they have to care for their patients. Almost all (98%) of the nurses surveyed by Buerhaus believe the future shortage will lead to increasing stress of nurses, lowered levels of quality patient care, and will serve as a major catalyst for nurses to leave the profession.

Hospital administrators and nurse leaders from all segments of the healthcare workforce must develop effective strategies to retain bedside nurses and nurse managers. Several factors are known to influence the retention of qualified RNs to remain in the workforce, including supportive environments with strong leadership; flexible work schedules; managerial characteristics, including understanding generational differences of the workforce; and financial considerations / pay, among other factors. Indeed, nurse managers must not only provide a healthy work environment where employees have the support and skillset / knowledge to provide quality patient care, they must also consider the individual needs of the staff they supervise. These challenges can be daunting, even for the most experienced nurse manager.

This symposium explores key issues in engaging today's complex nursing workforce that ultimately influence retention and engagement of RNs. We begin with a mixed methods study that explores the intention(s) of experienced nurses to leave the bedside and factors that either support their retention or hasten their decision to leave employment altogether or migrate away from bedside care. We then discuss the timely and relevant topic of how one large academic center in the southwest was able to provide nurse leaders with the skills and knowledge necessary to effectively manage generational differences among their employees, including the development of best-practice leadership training resources.

Next, we share a successful quality improvement project designed to alleviate the workload of the front line nurse manager by enhancing the skillset of charge nurses, assistant nurse managers, and nurse educators, including an in-depth training curriculum addressing pertinent leadership concepts and principles. Finally, we address gender-related wage disparities in nursing and how the gender pay gap in nursing is greater than the gender wage disparities in other female-dominated professions, such as teaching. We provide evidence that this substantial gender disparity (men make more than women) may be an indirect measure of the misallocation of resources in effective patient care.

ENGAGING THE COMPLEX NURSING WORKFORCE: STRATEGIES FOR SUCCESS

Developing the Frontline Nursing Leader

*Michael Danielson, MS
OD Consultant
University of Utah Health
Salt Lake City, UT*

*Juan Hernandez, MSN, RN
Senior Nursing Director
University of Utah Health
Salt Lake City, UT*

*Michael Sanchez, MBA, RN
Clinical Operations Director
University of Utah Health
Salt Lake City, UT*

*Stacy Parker
E-Learning Developer
University of Utah Health
Salt Lake City, UT*

*Scott Christensen, DNP, MBA, APRN
Clinical Operations Director
University of Utah Health
Salt Lake City, Utah*

Purpose: The purpose of this quality improvement project was to alleviate the workload of nurse managers at a large academic medical center in the Southwest by enhancing the skillset of charge nurses, assistant nurse managers, nurse educators, and other lead shift nurses.

Background: The nurse manager role is demanding and dynamic. Nurse managers field top-down requests from executives, supervisors, coworkers, and clinical leaders; while also maintaining bottom-up operations in overseeing multiple employees. This heavy workload is a common source of nurse manager stress, burnout, job dissatisfaction, intent to leave the job, and turnover. One solution to lightening the nurse manager workload is to facilitate the skillset development and level of responsibility of front-line nurse leaders.

Methods: A standardized frontline nursing leadership curriculum was created after reviewing publications from nursing and business journals, with additional input from current frontline leaders who addressed gaps in their training and expertise. Curriculum was developed to meet adult learning principles with a focus on online learning. Training guides for managers were also developed to facilitate ongoing education.

An initial training session on the leadership curriculum was held with 374 nurse leaders and included nurse directors, nurse managers, charge nurses, assistant nurse managers, nurse educators, and other lead shift nurses. The effectiveness of the training was evaluated using quantitative and qualitative approaches, including pretest/posttest surveys and focus groups. Materials were further refined based on participant session feedback and focus group participants.

Outcomes: Participant feedback indicated that the training increased their knowledge of individual leadership strengths, weaknesses, and nursing leadership principles. The majority of the respondents / participants reported a high level of comfort in applying these concepts in their leadership role(s).

Conclusions: Nursing managers will most likely continue to see increased responsibilities added to their day-to-day work. This project seeks to address this demand by both growing and empowering an up-and-coming group of nurse leaders. By identifying gaps in current frontline leadership competencies and ensuring focused training interventions, all levels of nurse leaders will be better equipped for success in leadership transition. Future analysis is anticipated as participants continue their leadership development with topics such as turnover, patient satisfaction and employee engagement.

ENGAGING THE COMPLEX NURSING WORKFORCE: STRATEGIES FOR SUCCESS

Experienced Nurses' Intention to Leave the Bedside

Linda C. Hofmann, PhD, RN
Assistant Professor (Clinical)
College of Nursing
University of Utah
Salt Lake City, UT

Purpose: The purpose of this study was to explore the phenomenon of nurse intention to leave bedside care with a focus on reasons, causes, and rationales, in addition to how experienced nurses determine future career paths. Understanding why experienced nurses leave bedside care allows for the identification and implementation of positive strategies to support, accommodate, and potentially retain experienced bedside nurses.

Background: Experienced nurses are essential to quality patient care. Their ability to practice independently using the nursing process, including critical thinking skills, is invaluable to delivering quality care. The problem of experienced nurses who choose to leave bedside care is serious and costly for healthcare, yet their perspectives are not well understood. At the point at which they become “experienced,” many nurses have multiple career options, including expanded role opportunities, furthering their education, or pursuing flexible employment possibilities. It is difficult to implement changes that could result in their retention when there is not a clear understanding of why these nurses choose to leave bedside care.

Methods: This qualitative study used unstructured interviews to understand why experienced nurses intended to leave the bedside. The state licensee list was utilized to recruit nurses who had been licensed for 3 to 12 years. Participant inclusion criteria included a minimum of three years in direct patient care, defined as *working in a hospital nursing unit, in homecare or hospice, or in a clinic providing hands-on care to patients*. Thirty-nine nurses from different healthcare institutions throughout one state in the southwest participated. The mean age of participants was 30 years old, with the majority being married (80%); 10% divorced and 10% single. Sixty-nine percent of the participants reported having three or more children, with the average age of the children being 5 years-old, of which approximately 50% were under school age.

Results: Content analysis of study results indicated family responsibilities and associated personal priorities were the most important factors to the nurse in making career decisions to leave or stay in nursing positions or to advance their career. Career-path decisions and job changes to move away from the bedside were heavily influenced, and overshadowed by, frequent scheduling conflicts and whether the employer considered the nurse's family obligations. Inflexible scheduling and the number of work hours required to maintain part-time or full-time employment was particularly overwhelming to the nurse. Employers who were unwilling to reduce or flex work hours resulted in a ‘tipping point’ which pushed a nurse to consider her/his intention to leave the bedside.

Implications: Employers and healthcare leaders may use these findings to intervene and prevent resignation of the nurse. This information can provide insights for strategic workforce planning and can serve to facilitate organizational planning to support nurse career pathing and stabilization of experienced nurses at the bedside.

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Can I Relate? How to Lead Nurses across the Generations

*Scott S. Christensen, DNP, MBA, APRN, ACNP-BC
Clinical Operations Director
University of Utah Health
Salt Lake City, UT*

Purpose: The purpose of this quality improvement initiative was to provide nurse leaders with the knowledge, tools, and skills necessary to lead each generation in the nursing workforce, thereby enabling leaders to build stronger relationships and retain their nursing employees.

Background: Alarming nurse shortages are just around the corner, with an estimated shortage of one million nurses in the United States by 2022. Optimizing the retention of nursing staff is vital to the long-term success of any healthcare organization. The relationship between nurse leaders and frontline staff is a critical factor for retaining nursing professionals. One barrier to forming this vital relationship is the nurse leader's understanding of and ability to mitigate generational differences. Nurse leaders who master this skill are better equipped to retain and develop their nursing workforce.

Methods: Educational and training tools for nurse leaders were created after methodically reviewing publications from nursing, healthcare, and business journal sources. Time demarcations, defining moments, values, generational styles, and leadership takeaways were discussed for each generation.

Nurse leader groups (n=53) who received the training included nurse managers, assistant nurse managers, nurse practitioners, and bedside nurse leaders. Participants were evaluated using quantitative and qualitative approaches, including pretest/posttest surveys (see table below) and personal interviews. Materials were further refined based on participant feedback. Finally, curriculum was organized into a review manuscript format for publication.

Outcomes: Training objectives were met in that pilot participants 1) summarized characteristics of each generation; 2) developed action plans for applying this content to their settings; 3) recalled generational characteristics and management strategies three months after initially receiving curriculum.

Select Descriptive Statistic Findings from Pretest/Posttest Responses	Pretest	Posttest
Accuracy of multiple choice answers testing generational knowledge	51.2%	66.4%
High self-ranking of generational knowledge.	15.1%	52.4%
High self-ranking of comfort level in using generational knowledge to influence coworkers.	41.5%	78.6%

As a final project outcome, the review manuscript of literature findings was submitted and accepted for peer-review publication by the *Journal of Nursing Management* (in press).

Conclusions: Effectively leading nurses across generations is an important skill for nurse leaders. This project leveraged best practice data to create generational leadership training resources. Through obtaining and applying knowledge of generational management strategies, nurse leaders are better equipped to support and retain frontline nurses.

Future projects should focus on scientifically measuring the effectiveness of these resources, for example, testing the validity of pretest/posttest questions and by analyzing nurse employee turnover rates.

ENGAGING THE COMPLEX NURSING WORKFORCE: STRATEGIES FOR SUCCESS

Gender-Related Wage Disparities in Nursing

*Barbara L. Wilson, PhD, RN
Interim Dean and Associate Professor
College of Nursing
University of Utah
Salt Lake City, UT*

*Matthew J. Butler, PhD
Director: Division of Health Economics
Center for Population Science
& Discovery
University of Arizona
Tucson, AZ*

*Richard J. Butler, PhD
Martha Jan Knowlton Care
Professorship, Emeritus
Department of Economics
Brigham Young University
Provo, UT*

Purpose: We compared and contrasted gender wage disparities for registered nurses (RNs), relative to gender wage disparities for another female-dominated profession, teachers, while controlling for sociodemographic factors such as age, ethnicity, marital status, educational attainment, and number of children.

Background: The gender pay gap in the United States (US) is an ongoing issue that affects women in nearly all occupations. Jobs traditionally associated with men tend to pay better than those traditionally held by females, and there is evidence to suggest there is within-occupation gender pay differences as well. We sought to test this theory using the largest US random representative sample of RNs and school teachers over a 13-year period.

Methods: We analyzed data from the American Community Survey (ACS), an ongoing extensive governmental survey of the U.S. population that includes basic demographic information as well as hours of work, wages and employment status from 2000 to 2013 utilizing fixed-effects regression analysis. The ACS provides a representative sample of about 30,000 RNs and nearly 60,000 teachers a year. Data was limited to those who self-identified as an RN or a primary / secondary school teacher in their current or most recent job.

Results: We found significantly greater disparities between nurse pay by gender than in teacher pay by gender. Without controls for usual hours of work per week, male RNs and male teachers made more than females (27.9% more for male RNs and 19% more for male teachers). When controlling for hours of work per week, the gender pay differential dropped, but remained significantly higher for male nurses, who made approximately \$70,000/year compared to female nurses, who made approximately \$58,000/year when controlling for hours worked.

Implications: While more education is one way to increase individual earnings, it is not effective against the gender pay gap. At every level of academic achievement, women earn less than men. Although pay gaps may in part reflect women's and men's choices of occupation, it is discouraging that even within female-dominated professions such as nursing and teaching, women earn less than men. As noted in this study, the gap in nurse pay by gender is greater than the gap in teacher pay by gender. This substantial gender disparity may be an indirect measure of the misallocation of resources in effective patient care, and warrants additional research. It should also serve as a warning to healthcare employers to consider compensation models that support pay equity for the nursing workforce.

Abstracts of Poster Presentations

ENVIRONMENTAL ISSUES

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Comparison of Environmental Concerns in Two Disparate Montana and Nevada Communities

*Sandra W. Kuntz, PhD, RN
Associate Professor, College of Nursing
Montana State University
Kalispell, MT*

*Charlene A. Winters, PhD, RN
Professor, College of Nursing
Montana State University
Missoula, MT*

Purpose/Aims: The purpose of this study was to discover shared components of community-driven environmental concerns related to exposure to amphibole asbestos in two disparate communities: one in rural Montana; the other in suburban Nevada. Parallel aims in both communities at different points in time included the following:

- Aim 1: Establish an understanding of the community and community member's primary concern(s) related to naturally-occurring asbestos (NOA)--amphibole asbestos (AA).
- Aim 2: Examine guiding principles to support the community/researcher partnership and facilitate community engagement, consistent with community norms.

Rationale/Conceptual Basis/Background: Amphibole asbestos is a naturally occurring fibrous mineral found in the environment and unleashed, often inadvertently, with humans exposed through anthropogenic activity (e.g. mining, construction activities, and recreation). Mine workers in Libby, MT received occupational exposure to asbestos embedded in vermiculite; secondary exposure of family members occurred through take-home contamination on worker clothing. Eventually, members of the community were exposed through use of the contaminated vermiculite at community sites. Studies conducted in Nevada (NV) by University of Nevada Las Vegas (UNLV) geologists and researchers from the Nevada Department of Transportation confirmed the presence of NOA in areas frequented by recreationalists, tourists, and area workers building an interstate highway. In both MT and NV, a community action group (CAG) formed by concerned citizens, created awareness of the presence of AA/NOA among citizens, government officials, and scientists positioned to help answer community-raised questions.

Methods: An exploratory, community-based participatory research (CBPR) approach was applied in both locations and included data collection through a community assessment (Aim 1) and key informant interviews. In addition, public forums/listening sessions were employed using open-ended questions to learn about the community and elicit community concerns around asbestos exposure (Aims 1 & 2). Focused interviews were conducted with our community partners to identify guiding principles and strategies to support partnership and engagement (Aim 2).

Results: Deductive and inductive processes were applied to the initial analyses with results used to compare the similarities and differences between the two communities. Data from focus groups, community forums/listening sessions, and interviews were included. Content analyses uncovered six common Montana and Nevada themes and community health concerns: 1) News outlets and media reports precipitated initial awareness; 2) distrust of government intervention; 3) fear of the unknown including potential exposure due to contaminated dust; 4) financial and economic community-wide impact; 5) stigma and worry about impact on recreational identity.

Implications for Practice/Further Research: Although the MT and NV communities are demographically and geographically very different, common themes clearly direct researchers to pursue studies related to potential exposure of recreationalists, children, and community members. Community-wide strategies that incorporate respect and collaboration are critical to communities impacted by an environmental hazard.

ENVIRONMENTAL ISSUES

Sustainability and Climate Change in Nursing Curricula

*Phyllis Eide, PhD, MPH, MN, RN
Washington State University
College of Nursing
Spokane, WA*

Purpose/Aims: The purpose of this study is to survey nursing education programs in the Western United States to evaluate the presence of curricular content related to environment, sustainability and climate change.

Rationale/Background: Today's nursing students will be the health care professionals of tomorrow, working with individuals, families and communities over the next several decades. Numerous studies released over the past 30 years by the UN's Intergovernmental Panel on Climate Change (IPCC), have reinforced the health hazards associated with climate change. Most recently, the IPCC released a special report on 10/8/18 in which scientists predict that temperatures are likely to rise by 1.5 degrees Celsius between 2030 and 2052, unless rapid and unprecedented measures are taken to curb carbon emissions. Significant health issues related to climate change may include those from direct impacts (heat waves) and indirect impacts (such as poor air quality, enhanced storms and hurricanes, changes in agriculture, and impacts to water supplies). Nursing students need to be educated about these impacts, and how nursing's advocacy role could play a part in both mitigation of risk and adaptation to a new climate reality. Because these areas are typically not addressed in undergraduate nursing programs, it is important to survey what is currently being taught in order to assess the need for inclusion of specific content on this set of topics.

Methods: Based on research conducted in Canada in 2010 (Powers & Kennedy), the current study utilizes a survey tool containing questions regarding education of nursing students about climate change, environmental sustainability, 'green initiatives' undertaken to reduce greenhouse gas emissions or pollutions at the program/school of nursing, and formal committees to address such issues at the program/school/ or college/ university level. An initial outreach to nursing education programs throughout the West was undertaken to identify the best respondent at each program, school or college of nursing. The researcher has partnered with a social & economic sciences research center at her university to deploy the survey tool to the revised list of respondents.

Results: As of October 2018, over 200 surveys have been deployed, using an online Qualtrics survey. The study is currently in the second phase of follow up reminders to those who have yet to complete the survey.

Implications: Nursing students currently being educated will be the cadre of nurse professionals who will be delivering care to populations that are very likely to be exposed to increasing health threats from a changing climate. An example of this is the growing recurrence of wildfire smoke throughout many locations in the West for extended periods of time in the summer months. Nurses armed with knowledge can assist clients to make informed decisions about how best to remain healthy in the face of rising temperatures, impaired air quality, and diseases such as West Nile virus that are intruding into more northern latitudes as the vector habitat changes.

ENVIRONMENTAL ISSUES

Assessing Public Responses to Wildfire-Related Air Pollution: An Innovative Approach

Julie Postma, PhD, RN, Associate Professor, College of Nursing, Washington State University, Spokane, WA; Patricia Butterfield, PhD, RN, Professor & Associate Dean of Research, Elson S. Floyd College of Medicine, Washington State University, Spokane, WA; Marissa Grubbs, BS, Research Assistant, Department of Civil and Environmental Engineering, Washington State University, Pullman, WA; Yoni Rodriguez, Research Assistant, Department of Civil and Environmental Engineering, Washington State University, Pullman, WA; Abigail DeNike, Research Assistant, Elson S. Floyd College of Medicine, Washington State University, Spokane, WA; Von Walden, PhD, Professor, Department of Civil and Environmental Engineering, Washington State University, Pullman, WA

Purpose: The purpose of this study is to inform the development, delivery and testing of protective public health messages during wildfire season. Specific aim 1 is to identify search terms for social media mining that encompasses a broad array of perceptions and responses to wildfire smoke. Specific aim 2 is to assess the feasibility of using social media to assess population-level, respiratory health sensitive to changes in ambient air quality.

Rationale/Conceptual Basis/Background: Generic air quality alerts offer little guidance on strategies to prevent and mitigate risk from smoke events that are sustained for weeks at a time. Response varies to health advice accompanying air quality warnings, and psychosocial factors matter. People with respiratory conditions are more likely change their behavior if the message comes from their health care provider. While air quality monitoring has gotten more sophisticated and available in real time, risk communication strategies have lagged, both in terms of messaging and channels of communication. Social media is increasingly used by the public for real-time communication. Likewise, air quality monitoring is increasingly available in real time. Harnessing these technologies provides an opportunity to refine public health messaging to reduce the impact of wildfire smoke on health. A conceptual framework to develop search terms used to mine social media was developed from clinical tools, public health surveys, and an expert panel. The framework reflects five concepts: 1) ambient air quality conditions, 2) respiratory symptoms and exacerbations, 3) risk perception and self-efficacy, 4) behavioral responses and self-care management, and 5) quality of life and healthcare utilization.

Method: Twitter posts will be mined for relevant messages during the 2017 and 2018 wildfire season within a 20 miles radius of Spokane, WA. Descriptive content analysis will be used to code the messages relevant to the concepts and identify new categories. Air quality data will be identified during that same period from multiple sources. Correlations will be explored between the number and content of relevant social media posts and the air quality conditions.

Results: Results will inform a population-level assessment of community response to wildfire smoke, the development of risk communication messages that reflect different levels of vulnerability to the smoke, and the potential to use social media posts as a proxy for air quality exposure data. The framework will be refined based on concepts identified in this analysis to guide future inquiries.

Implications for Translation to Practice/Further Research: Nurses working in schools, worksites, clinics, hospitals and public health departments share a responsibility to communicate risk and protective actions to their target populations. Social media offers a nuanced approach to listen to population-level concerns and communicate protective strategies in real time to segmented audiences. Future interdisciplinary nursing research will test different messaging strategies and measure their response in real-time on social media, and compare uptake by English versus Spanish speakers.

Abstracts of Poster Presentations

GERONTOLOGY

GERONTOLOGY

A Culturally Sensitive Dementia Family Caregiver Pilot Study

Jung-Ah Lee, PhD, RN
Associate Professor
Sue and Bill Gross School of Nursing
University of California, Irvine
Irvine, CA

Jessica Borelli, PhD
Associate Professor
Psychology and Social Behavior
University of California, Irvine
Irvine, CA

Kajung Hong, BA
Junior Scientist
Psychology and Social Behavior
University of California, Irvine
Irvine, CA

Amir Rahmani, PhD
Associate Specialist, Bren School of
Information and Computer Sciences
University of California, Irvine
Irvine, CA

Background: Over 5.7 million Americans are living with Dementia (e.g., Alzheimer's disease, AD), a disease with no treatment and no cure. In California alone, 610,000 individuals have the AD, the 5th leading cause of death. About two-thirds of the caregivers for persons with dementia (PWD) are women, most often family members. Also, a third of the caregivers are over 65. Dementia takes a significant toll on caregivers, often resulting in chronic stress, depression, poor health quality of life, and even early mortality due to the round-the-clock care responsibility for PWD. Research has shown that Vietnamese Americans (VA) and Korean Americans (KA) underutilize public health services available for dementia care, and tend not to seek treatment until the situation becomes a crisis or is unmanageable with current resources.

Objective: To test the feasibility of intervention to VA and KA family caregivers of PWD receiving a culturally appropriate and language-specific caregiving skill training program in order to improve their mental and physical health as well as reduce some of their caregiving burdens.

Methods: This pilot feasibility study is a 4-weekly home visitation program. Outcomes (e.g., depression, health quality of life, caregiving burden) are measured before and after the intervention. The intervention has two parts: 1) relational savoring - a stress reduction technique which includes mindfulness exercise (i.e., breathing) and recalling positive emotional experiences with PWD) and 2) language-specific and culturally appropriate education on caregiving skills to improve the responses to the PWD. The education content includes (a) understanding Alzheimer's and related dementias, (b) compassionate communication skills with PWD, (c) dementia care resources specific to their ethnic communities, and (d) other related issues with PWD (e.g., safety, financial and/or legal issues). Flyers were posted in local VA and KA community centers, local medical offices, and local Asian grocery markets in Southern California.

Results: The recruitment (up to 12 participants) and the intervention are on-going. Currently, we have 6 participants including 3 adult daughters and 3 wives of PWDs; age ranging from 57 to 82. The stages of dementia of PWD vary from early to late stage. The complete results will be presented at the conference.

Implications: This study will be the first to test the feasibility of a culturally-appropriate intervention for VA and KA immigrant dementia family caregivers in the United States. The focus is on the use of relational savoring (built on mindfulness and positive memories) that improves the caregiver's health and wellbeing as well as improving the interactions with the PWD. Additionally, education on caregiving skills will provide necessary knowledge to improve caregivers' responses to PWD behaviors. This research has the potential to contribute to the significant reduction of health disparities in dementia care, assist family caregivers in self-management and increase quality of life for both family caregivers and dementia patients in VA and KA communities.

Funding: The project was supported by the Arthur N. Rupe Foundation (PI: Jung-Ah Lee, PhD, RN).

GERONTOLOGY

A Framework of Being the Spouse of a Person With Early-Age Onset Dementia

Sasha Binford, RN, MS, PhD(c)
Adult-Geriatric Clinical Nurse Specialist – Board Certified
Department of Physiological Nursing
Department of Neurology, Memory and Aging Center
University of California, San Francisco
San Francisco, CA

Purpose: The purpose of this study is to explore the meanings caregivers of spouses with early-age onset dementia (EOD; defined as age of symptom onset before 65 years) ascribe to their role in their unique situation, and actions employed as coping mechanisms to provide the basis for development of theory illustrating the shared, basic, psychosocial processes underlying their situation of being a spouse of a person with EOD.

Background: The informal caregivers of persons with EOD are most frequently the affected individuals' spouse and are reported to experience greater levels of distress and burden and lower quality of life than those caring for older individuals with a more typical Alzheimer's-type dementia. These caregivers face unique challenges related to the unexpected nature of disease onset at this life stage and atypical symptoms more prevalent in this patient population, and report feeling less prepared for the role than spouses of late-onset dementia (defined as age of symptom onset at/after 65 years). These factors can have potentially devastating repercussions on socio-professional, financial, and psychological dimensions of family life for these EOD caregivers. A "one-size-fits-all" approach to supporting these caregivers continues to be employed which risks overlooking specific needs stemming from this caregiver population's unique situation and contributing to adverse outcomes. However, there is no known study exploring the meanings made of the shared situation of this caregiver population with attention on development of a theoretical framework to guide relevant studies investigating interventions specific to this caregiver population.

Methods: Semi-structured interviews and participant observations were conducted with five participants. Qualitative data were collected and analyzed with grounded theory methodology.

Results: Each of the participants had made or was in the process of making an identity transition: how they view their role in their respective dynamic is becoming more and more caregiver-like towards an eventual, complete shift to that of a caregiver. The distinction was made across all five participants between identifying as a spouse versus as a caregiver of their person with EOD – they do not see themselves as a combination of both (i.e., a "spousal caregiver"). This process appears to take on a step-wise fashion, with incremental shifts in identity reflecting challenges to the notion held of what it means to be a "spouse" (defined by each participant as a "partner"). These shifts occur as means of coping with the incongruencies presented by their person with EOD's inability to meaningfully contribute to family needs (e.g., generating an income, managing financial responsibilities, providing dependent care, as well as attending to emotional aspects of the relationship). The "step-downs" represent particular moments in the otherwise continuous decline of the person with EOD which carry special meanings for the respective participant, causing them significant distress and requiring them to take action.

Implications: These results support prior research highlighting the unique experiences of these caregivers at this life stage while providing a framework for understanding psychosocial dimensions unique to this caregiver population. The results inform the design of future tailored interventions for spouses of person with EOD.

Funding: NIH predoctoral traineeship in the NINR-supported Biobehavioral Research Training Program in Symptom Science (T32 NR016920).

GERONTOLOGY

Factors Influencing 30-Day Readmissions among Older Adults with Dementia

*Lynell Lemon, MSN, RN, PHN
PhD Student*

*Hahn School of Nursing and Health Science
San Diego, CA*

*Patricia Roth, EdD, RN
Director of the Doctor of Philosophy in Nursing Program
University of San Diego
San, Diego, CA*

Specific Aim: The specific aim of this study is to identify biological and social factors that contribute to 30-day hospital readmissions (HR) among older adults with any type of diagnosed dementia.

Background: Dementia represents a global health priority with 35.6 million people with dementia reported worldwide in 2010, a number that is estimated to double every 20 years. Medicare beneficiaries with dementia have twice as many hospital admissions per year as other older people and are more likely than those without dementia to have other chronic conditions. Costs of treatment and care for older adults with dementia is expected to rise as they often require frequent and costly hospitalizations to treat physiological symptoms related to comorbid conditions. The increased frequency of hospitalization consequently results in more care transitions that create strain upon the patient, caregivers, and health care system with a poorer recovery outlook for rehospitalizations among these older adults.

Methodology: This descriptive cross-sectional correlation study will utilize data extracted from an existing electronic health record (EHR) database of older adults who received acute care from a 444-bed nonprofit community hospital in the San Diego metropolitan area. Case data from January 2013 until September 2018 will be used to identify relationships between biological and social factors and 30-day HR by calculating Pearson, Spearman, and point biserial correlations. The considered biological factors are age, gender, race/ethnicity, co-morbidities, and admission diagnosis. Discharge destination, fall risk, payer source, primary language, and Palliative Care (PC) consultations will be considered social factors. Statistical significance for these correlations will be set a priori at 0.05. Variables that show statistically significant correlation will be included in Logistic regression analysis to show the relationship and risk ratios of each independent variable correlating with 30-day HR.

Results: Pending

Implications: Identification of factors associated with 30-day readmission rates for older adults with dementia, from this study, may lead to 30-day hospital readmission prevention and stimulation of nursing care delivery model innovations to improve care transitions for this population and for their caregivers.

GERONTOLOGY

Embarrassment: A Concept Analysis

*Hanne R. Dolan, MSN, RN
Doctoral Student
College of Nursing
University of Arizona
Tucson, AZ*

*Ruth Taylor-Piliae, PhD, RN,
FAHA Associate Professor
College of Nursing
University of Arizona
Tucson, AZ*

Purpose: Embarrassment is commonly felt by patients experiencing an illness or health-related threat. The concept of embarrassment originated in psychology. Using Walker and Avant's procedures for Concept Analysis the concept of embarrassment will be clarified for nursing.

Definition of Concept: Embarrassment is an emotional state associated with mild to severe levels of discomfort, experienced by someone on the recognition that one has acted in a way that is inconsistent with one's personality. Embarrassment serves to guide one's actions and maintains one's identity, and embarrassment occurs when personal standards are violated. Embarrassment is experienced in the relation with others, and the belief that other's views of oneself is deflated, leads to loss of self-esteem. The embarrassed person is usually blushing or nervous and will try to conceal the feeling by laughing or ignoring the situation. If unsuccessful, embarrassment can lead to panic, anger or escaping. Embarrassment or the threat of embarrassment can inhibit someone from acting in their own best interest. Embarrassing situations include accidents such as falling, or acquiring a condition inconsistent with one's personal standards, such as not controlling one's own urination.

Concept Analysis Process: Walker and Avant's eight-step concept analysis process was used to examine the concept of embarrassment. The first step is selecting the concept, then second, determining the aims of the analysis. The third and fourth steps are to identify all uses of the concept and then determine the defining attributes. Step five is to construct a model case, while step six is constructing borderline, related, contrary and illegitimate cases. The seventh and eight steps are to identify antecedents and consequences, and then define empirical referents.

Logic Linking the Concept to Nursing Research Problem: Both a person and a situation can be considered embarrassing. Embarrassment occurs in a social context, as an individual does not get embarrassed when being alone. Shame is a closely related feeling that focuses on judgement of character, whereas embarrassment focuses on personal presentation. Defining attributes of embarrassment include the uncomfortable feeling of exposure or loss of self-esteem. Embarrassment is the result of the discrepancy between personal standards and an awkward situation. Antecedents include social situations where personal standards or social conventions are violated, or an anticipated embarrassing situation. Consequences include the behaviors of blushing, anger or completely ignoring the situation. Embarrassment or fear of embarrassment may result in not acting in one's own best interest, such as not seeking medical attention after a fall. Embarrassment can be explored empirically by interview or observation.

Conclusion: Embarrassment is an emotional response to a situation or an illness that violates personal standards. Embarrassment can lead to not acting in one's own best interest. Embarrassment is commonly felt by older adults when experiencing an accidental fall, and the feeling can prevent the older adult from adhering to fall prevention measures. If older adults perceive themselves as strong and independent, then experiencing a fall violates this personal standard. Embarrassment is a vital concept for illness or health-related threats, particularly among older adults.

GERONTOLOGY

Outcomes in Older Adult Trauma Patients Using the ISAR Tool to Predict Frailty

Julie S. Fitzwater, MNE, RN, CNRN
Assistant Professor, School of Nursing
Linfield College
Portland, OR
jfitzwa@linfield.edu

Purpose: The purpose of this study was to determine if differences were identified in length of stay (LOS) in the hospital, LOS in the intensive care unit (ICU), and number of in-hospital complications between geriatric trauma patients divided into two groups based on admission frailty status. The Identification of Seniors At Risk (ISAR) tool was used to estimate frailty status.

Background: Hospitalized trauma patients aged 65 years and older who are identified as frail are at increased risk of poor outcomes. An older adult's ability to recover from an injury is adversely affected by frailty. Most hospitals in the U.S. do not have a formal program initiative for the older adult population to reduce mortality and complications despite available resources. To evaluate if changes are needed in the care of older adult trauma patients in one hospital system, a study was designed to determine if frail and non-frail older adult trauma patients (independent variables) had significant differences in key outcomes (dependent variables). Using the ISAR tool in this study contributes to the research about clinically useful tools for measuring frailty. The ISAR tool is expected to differentiate frail from non-frail geriatric trauma patients and therefore identify which patients would benefit from geriatric-specific interventions to plan care while hospitalized.

Methods: A nonprobability convenience sample was used of all trauma patients age 65 years and older admitted to a Level I trauma center for one year. The total number of valid patient cases was 514 with an average age of 77.4 years. Patients were screened retrospectively using the Identifying Seniors At Risk (ISAR) tool which identifies patients at risk for frailty. Trauma registry data and patient records were used to score the ISAR tool and record LOS and number of in-hospital complications. Age, gender, and Injury Severity Score (ISS) were also recorded for the patients in the study.

Results: The ISAR tool met minimum acceptable requirements for reliability based on the low number of items in the scale with an inter-item correlation of .2. Number of positive for frailty patients was 383 and negative for frailty was 131. The sample contained 282 male patients and 232 female patients. Multivariate Analysis of Variance (MANOVA) identified statistical significance of a positive ISAR screening for frailty and longer lengths of stay in both ICU and hospital stay. No statistical significance was associated with the number of in-hospital complications and positive ISAR screening for frailty. The Injury Severity Score mean for all cases was 10.1 (non-frail 9.8, frail 10.4) which is in the range of moderate trauma.

Implications: The findings suggest a plan of care informed by geriatric-specific interventions could improve outcomes related to LOS, but do not have as great an effect on in-hospital complications. Intervention studies are important to determine what variables may affect LOS for this population and its impact on outcomes, including costs of hospitalization. Research is needed on the influence of geriatric consults on the outcomes of frail older adults who experience trauma.

GERONTOLOGY

Dementia 360 Echo: Using Technology to Improve Dementia Care for Older Adults

Allison Lindauer, PhD, RN, NP

*Assistant Professor of Neurology & Assistant Professor School of Nursing
Layton Aging and Alzheimer's Disease Center*

*Deborah C. Messecar, PhD, MPH, AGCNS-BC, RN
Associate Professor & Program Director for
Master Nursing Education
School of Nursing*

*Andrew Natanson, MD
Assistant Professor of Neurology
Layton Aging and Alzheimer's Disease Center
School of Medicine*

*Maggie McLain McDonnell, MPH, BBA
Senior Program Manager, Oregon ECHO Network*

*Katherine Wild, PHD
Associate Professor of Neurology
Layton Aging and Alzheimer's Disease Center*

*Oregon Health & Sciences University
Portland, OR*

Over 65,000 Oregonians have Alzheimer's Disease or a Related Disorder (ADRD). However, it is likely that there are *at least* 30,000 more with ADRD, but they do not know this due to the common problem of under diagnosis. Without a diagnosis, those with ADRD cannot modify risky behaviors (e.g., smoking), enroll in clinical trials, attend support groups, or engage in long term planning with their family members. Even when families seek a diagnosis there are barriers to care. In Oregon, where almost 44% of citizens over age 65 live in rural areas, (Oregon Office of Rural Health, 2016) access to care can be problematic. Because the majority of dementia specialists and nurses live in urban areas (Oregon Medical Board, 2018), patients and their caregiving families often wait 6 months or more to see them.

Aims: To address the diagnostic and family caregiving planning gap, we are implementing an Extension for Community Healthcare Outcomes (ECHO) program to educate nurses, primary care providers and students about dementia diagnosis and management. The purpose of this project is to test an ECHO program, "Dementia 360," with Oregon nurses, physicians and allied team members (referred to as "clinicians") and assess clinician acceptance and rating of its value in improving care. In addition, the evaluation of the quality of the student learning experience for the graduate student nurse participants who are acting as part of the delivery team, will be evaluated.

Methods: "Dementia 360" will provide case-based education and mentoring to distant clinicians. Dementia 360 follows the ECHO framework, a structured, effective model for education and support. The Dementia 360 team will consist of two nurse scientists, a neurologist, a neuropsychologist, and a student in the OHSU Masters in Nursing Education program. Interprofessional teamwork is an essential component of ECHO. The hierarchy of care provision is flattened and all participants, from students to experts, are expected to take an active role in each session. This team will be connected with distant clinicians via secure, HIPAA compliant videoconferencing technology. The Dementia 360 team will have the support and expertise of the Oregon ECHO Network. The Dementia 360 ECHO is practice improvement and student education initiative delivered once per week for ten weeks over a one hour teleconference. The team provides a 15-minute lecture. One of the rural clinician participants then presents a case. The clinicians and the team then discuss the case and the team provides verbal and written recommendations to the clinician participants.

Results: Preliminary outcomes from the pilot work which are in progress will be described for this poster presentation.

Implications: We hope to establish the feasibility and acceptability of Dementia 360 for clinician participants providing dementia care and its usefulness as a clinical training activity for nursing graduate students. Based on this feasibility evaluation, future funding for a long-term clinical education program will be sought.

Funding: Hartford Award for Research and Practice (HARP)

GERONTOLOGY

Factors Associated with Falls in Homebound Community-Dwelling Older Adults

Yunchuan (Lucy) Zhao, PhD, MPAff, RN
Assistant Professor
School of Nursing
Boise State University
Boise, ID

Jenny Alderden, PhD, APRN
Assistant Professor
School of Nursing
Boise State University
Boise, ID

Purpose/Background: Falls are a serious public health concern. About 30% of older adults aged 65 or above experience a fall annually. Falls adversely impact older adults, their families and the public health. The costs of falls are significant. An average fall costs Medicare \$10,000, and the cost doubles for people 72 and older. Homebound older adults are a vulnerable population who often have functional disabilities and multiple chronic conditions, which place them at increased risk for falls compared to non-homebound older adults. However, few studies have examined specific risk factors for falls in homebound older adults, including environmental factors and mobility in the home. The purpose of this study was to examine risk factors associated with falls among homebound community-dwelling older adults.

Conceptual Framework: A conceptual framework was developed using the National Health and Aging Trend Study (NHATS) disability conceptual model. Factors associated with falls were selected based on the NHATS disability conceptual model and literature review, including personal conditions, environmental factors, and physical functioning and limitation factors. Personal conditions consisted of sociodemographic characteristics and chronic health problems. Environment factors included in home and outside home environment conditions. Physical functioning and limitations included difficulties in activities of daily living (ADLs) and instrumental activities of daily living (IADLs), as well as physical problems that limited activities.

Methods: This was a cross-sectional, correlational study utilizing round 6 data of the NHATS. The sample included a total of 1,356 homebound community-dwelling older adults aged 65 and above. Descriptive statistics were conducted to examine the characteristics of the sample and bivariate tests with chi-square were used to test the relationships between each independent variable and the outcome variable - falls within the last month reported in NHATS. Multiple logistic regression analyses were performed to identify factors associated with falls.

Results: Among the 1,356 homebound older adults, 288 (21.2%) reported falls. Being a male was a significant predictor for falls (OR = 1.59, $p = 0.005$). Males were 59% more likely to experience a fall than females. Having hypertension, or depression/anxiety placed homebound older adults at increased risk for falls (OR = 1.647, $p = 0.031$; OR = 1.269, $p = 0.049$, respectively). Older adults with hearing impairment were 62.4% (OR = 1.624, $p = 0.022$) more likely to experience falls while those having balance problems limiting activities were 53.1% (OR = 1.531, $p = 0.026$) more likely to have falls than those without these problems.

Implications: This study examined comprehensive risk factors for falls in homebound community-dwelling older adults. Findings from the study have important implications for clinical practice and research. To prevent falls in homebound older adults, community health nurses may consider assessing homebound older adults' fall risks and developing appropriate fall prevention strategies, especially for older adults with chronic health problems or functioning limitations. For future research, more studies are needed to examine the association between environment and falls in homebound older adults.

GERONTOLOGY

Effect of Exergames on Health Related Quality of Life in Older Adults: A Systematic Review

*Marysol Cacciata, MSN, RN, CCRN-K
Doctoral Student, PhD Program
Sue and Bill Gross School of Nursing
University of California, Irvine, CA*

*Jung-Ah Lee, PhD, RN
Associate Professor
Sue and Bill Gross School of Nursing
University of California, Irvine, CA*

*Anna Strömberg, PhD, RN, NFESC, FAAN
Professor; Dept. of Medical and Health
Sciences and Dept. of Cardiology
Linköping University, Linköping, Sweden*

*Lorraine Evangelista, PhD, RN, FAHA, FAAN
Professor
Sue and Bill Gross School of Nursing
University of California, Irvine, CA*

Introduction: Recent studies have shown the potential benefit of technology as an effective strategy for encouraging exercise and other forms of physical activity among older adults. Exercise through video or virtual reality games (i.e. exergames) has grown in popularity among older adults to increase physical activity and improve health and physical function; however, there is limited evidence on effectiveness of exergames on health related quality of life (HRQOL) in this population. This systematic review examined the effectiveness of exergames on HRQOL in older adults.

Methods: A systematic search of abstracts, trial data bases and peer reviewed articles published in PubMed, CINAHL, Web of Science, PsychInfo and Cochrane were conducted using keywords to identify peer-reviewed journal articles in English. We adopted the PRISMA guidelines for this systematic review. Randomized Control Trials (RCTs) that evaluated the effect of exergames on HRQOL in older adults when compared to a control group and published between January 2007 to May 2017 were included.

Results: Nine articles that included 634 older adults with varying levels of disability, mean age 73.6 ± 7.9 years old, and 67% female were included in the analyses. Significant improvements in HRQOL of older adults engaged in exergaming were reported in three studies. Sample sizes were small in 7 of the studies ($N \leq 60$). The study participants, exergame platforms, HRQOL instruments, study settings and length, duration and frequency of exergames varied across studies.

Conclusion: Exergaming is a new emerging form of exercise that can potentially improve HRQOL that is popular among older adults. However, findings from this analysis were not strong enough to warrant recommendation due to the small sample sizes and heterogeneity in the study participants, exergaming platforms, HRQOL instruments, length, duration and frequency of the intervention and study settings. Such factors do not allow for definitive conclusions to be made on the use of exergaming in improving HRQOL in this patient population. Further research is needed with larger sample sizes and less heterogeneity to explore the true effects of exergaming on HRQOL in older adults.

GERONTOLOGY

Risk for Frailty in Older Adults with Nutritional Decline as a Major Indicator

Betty Elder, PhD, RN
Professor
School of Nursing
Wichita State University
Wichita, KS

Carol J. Bett, PhD, RN
Associate Teaching Professor
School of Nursing
Wichita State University
Wichita, KS

Theresa Cooper, MSN/MBA, RN
Associate Clinical Professor
School of Nursing
Wichita State University
Wichita, KS

Debra Pile, DNP, APRN
Associate Professor
Wichita State University
School of Nursing
Wichita, KS

Purpose/Aims: This project proposes to use a research-team-developed assessment tool to interview older community-based adults to assess their risk for frailty. The survey is designed to assess the role of nutrition as it influences an individual's risk for decline in physical functioning.

Rationale: Recent research suggests that it may be possible to prevent the negative consequences of frailty by screening those who are at risk. Once an individual is identified, evidence indicates that effective, sustained interventions can prevent the subsequent disability and its adverse outcomes. Although many models assessing frailty focus on physical functioning, some studies suggest nutrition may be significant in the decline of the individual. This instrument was designed to evaluate risk for both physical and nutritional decline.

Background: Frailty is described as an age-related decrease in physiological reserves characterized as a weakened response to stressors resulting in increased risk for poor clinical outcomes. An individual with three of the following five characteristics characterizes the frailty phenotype; weakness, low energy, slow walking speed, low physical activity and weight loss. Current research on frailty typically focuses on physical decline, risk for falls and need for assistance with ADL's. While nutrition is widely recognized as a component of frailty, most measures of frailty consider only weight loss as the major nutritional indicator for frailty. No instruments were found that compared the four domains covered in this project; weight loss, meal intake, social aspects of nutrition, and mobility.

Method: This study will use a research-team-developed survey tool to assess physical, social, and nutritional decline in elderly individuals who are residing in the community. Statistical analysis will focus on a comparison of the physical deficits as compared to the intake of food. Approximately 150 undergraduate nursing students will conduct a survey of an individual over the age of 70 as part of an older adult class assignment. Data from the surveys will be analyzed using descriptive and inferential statistics.

Results: The survey is designed to ask each elderly participant questions related to four domains that may indicate an individual's risk for frailty. These values relate to the individual's ability to obtain food, prepare meals and eat meals that provide essential nutrients. This includes questions related to the potential causes of unintended weight loss and psychological aspects that deter eating such as feeling depressed or lack of social stimulation at meal times.

Nursing Implications: This proposed project will extend the current nursing knowledge in understanding the needs, perceptions and ability of the elderly to maintain physical and nutritional status and how that may influence their decline towards frailty.

Conclusions: This research will focus on identifying an individual's physical functioning as compared to aspects of obtaining, preparing and eating an adequate diet, including the social aspects of nutrition as they relate to frailty.

GERONTOLOGY

Walkable Neighborhoods and Cognition in Older Adults: A Conceptual Framework

*Boeun Kim, MSN
PhD in Nursing Science Student
University of Washington School of Nursing
Seattle, WA*

Purposes/Aims: The purpose of this study is to foster and guide building concrete body of evidence on the impacts of walkable neighborhoods on cognitive function in older adults. Specific aims are: (1) to extract elder specific attributes, a conceptual definition, and an operational definition, and (2) to develop a conceptual framework explaining the associations between walkable neighborhoods and cognitive function in older adults.

Background: Millions of people have dementias, and 600,000 older adults in the US die from Alzheimer's disease each year. The public health impacts of cognitive impairment call for solutions to promote cognitive health. A walkable neighborhood could be a promising solution to support cognitive health in older adults. However, the empirical evidence for the impacts of walkable neighborhoods is still inconclusive. The reasons for the mixed results could be (1) different definitions of walkable neighborhoods across studies, (2) lack of a theoretical framework, (3) absence of a valid standard measurement, and (4) complex pathways. It is therefore necessary to develop a conceptual framework with comprehensive understanding of the concept.

Methods: To comprehend the concept of walkable neighborhoods, attributes, a conceptual definition, and an operational definition were derived. For this part, electronic searches were conducted in PubMed, EMBASE, CINAHL, and PsycINFO in 2018 using a protocol. A total of 69 articles were included. To develop the conceptual framework, results from the literature search, previous theory analysis for the ecological model of aging, and a prior scoping review on the association between walkable neighborhoods and cognitive function in older adults were synthesized.

Results: Five attributes of walkable neighborhoods for older adults were extracted: Safe, Physical, Accessible, Chance, and Easy (SPACE). Safe, Accessible, and Easy are critical for age-related changes such as functional decline, driving cessation, and tendency to conserve energy. The walkable neighborhoods were described as physical environments to disentangle place effects from people effects and to accurately capture the characteristics of place. Personal differences in neighborhood effects by preference and functional levels were contemplated by adding the Chance attribute. In the operational definition, unlike traditional measures, neighborhood features at the micro-level and street connectivity (measured as diverse, available, and safe paths) were emphasized to capture the most relevant features to older adults. Finally, the conceptual framework was proposed. Perceived walkable neighborhoods were distinguished from objective walkable neighborhoods. This is because the perceived walkable neighborhoods could be different depending on personal characteristics. In addition, the direct and indirect pathways from walkable neighborhoods to cognitive function in older adults were discussed.

Implications: The conceptual framework would allow to understand the walkable neighborhoods impacts on cognition by suggesting the most relevant and critical attributes of walkable neighborhoods for older adults as well as explaining the related variables (i.e., potential mediators, confounder, moderators) and their relationships. This study would facilitate the development of reliable and valid measures of walkable neighborhoods for older adults and build evidence of the impacts of walkable neighborhoods on cognitive function in older adults.

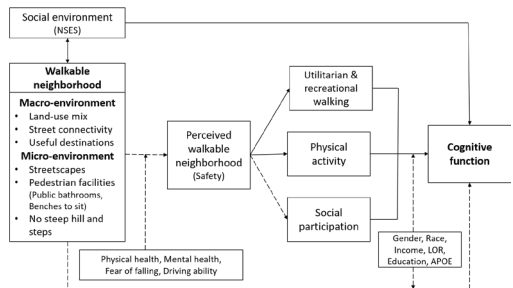


Figure 1. The conceptual framework of walkable neighborhoods and cognitive function in older adults

NSES, neighborhood socioeconomic status; LOR, length of residence; APOE, apolipoprotein E

Abstracts of Poster Presentations

HEART FAILURE

HEART FAILURE

Standardizing Heart Failure Care across a Clinic System: A Quality Improvement Project

*Alisha Peterson, BSN, RN, CCRN
DNP - Family Nurse Practitioner Program
Washington State University College of Nursing
Vancouver, WA
Alisha.mcknight@wsu.edu*

*Erin Blakeney, PhD, RN
Research Assistant Professor
Biobehavioral Nursing and Health Informatics
University of Washington
Seattle, WA*

*Megan Miller, MEd, MPH
Program Operations Specialist
Biobehavioral Nursing and Health Informatics
University of Washington
Seattle, WA*

Purpose/Aims: The purpose of this pilot project is to implement care protocols and workflow processes for heart failure (HF) patients in the primary care setting at three Sea Mar Community Health Centers in the Seattle area. Specific aims for this intervention are to increase provider knowledge, confidence in decision making, and workflow satisfaction related to managing HF patients.

Rationale/Background: HF is an epidemic in the United States with an increasingly high prevalence, mortality, and cost of care. It is one of the most expensive Medicare diagnoses due to complexity of care and recurrent hospitalizations. There is a critical need for strategies to optimize treatment in order to delay and reduce hospitalizations, however this early care is usually overseen by primary care providers lacking specialized knowledge. Sea Mar Community Health Centers serve a diverse, underserved community for primary care and management of chronic conditions, including HF. Due to lack of specialized knowledge and standardization of care, a partnership with the University of Washington (UW) School of Nursing (SON) and Sea Mar was established to develop and implement HF guidelines/workflow processes, and provide HF education to providers and clinic teams.

Methods: Prior to the start of the pilot program, a provider survey was completed to assess knowledge of HF management practices and needs for HF education. Guided by survey findings, an interdisciplinary project team, including HF specialists from UW, developed care guidelines and clinic workflow processes to standardize HF care at 3 selected Sea Mar clinics; a plan for implementation and staff education was developed. The first provider education session around HF management and updated Goal Directed Medical Therapy (GDMT) was completed April 2018. Implementation of the HF guidelines/workflows began in September 2018 with initial trainings held for clinic staff. Position specific (i.e. care coordinators, medical assistants) training on roles for HF care, follow-up education for providers, and team-specific training will be completed in October 2018. Follow-up sessions will continue through June 2019. This project has been determined to be exempt from a Human Subjects perspective.

Results: Initially, 23 provider surveys were received from Sea Mar providers. Results included moderately low confidence in current knowledge of HF (average=2.4/5) and lack of understanding of the doses, drug interactions, and side effects of HF medications (average=2.7/5). When asked how often providers refer to standardized care protocols or pathways for HF, the average response correlated as “little to occasionally”. To assess aims post-implementation, this provider survey will be repeated, and a shorter survey assessing HF workflow satisfaction will be given to all staff in December 2018.

Conclusion: In response to a growing HF population, a lack of standardized care, and low-confidence in HF knowledge and guidelines, a collaboration between UW and Sea Mar Community Health Centers formed to effectively implement new HF care processes and staff training. As more HF patients present in the outpatient setting, this project has the potential to drastically improve care processes through expansion to Sea Mar clinics serving rural and underserved communities in Washington State.

Funding: This project was part of program activities supported through a federal grant lead by Dr. Brenda Zierler titled, “Education-Practice Partnership to Improve Advanced Heart Failure Training and Outcomes for Rural and Underserved Populations” (HRSA, D09HP286700100).

HEART FAILURE

Heart Failure Readmission and the Physical Activity Vital Sign: Is There a Correlation?

*Jacob A. Barlow, RN, FNP-S
Graduate Student
College of Nursing
Brigham Young University
Provo, UT*

*Neil Peterson, PhD, RN, NP-C,
AGACNP-BC, Assistant Professor
College of Nursing
Brigham Young University
Provo, UT*

*Jane H. Lassetter, PhD, RN
Professor and Associate Dean of Graduate
Studies, College of Nursing
Brigham Young University
Provo, UT*

*Rodney H. Newman, RN, MSN, ANP-C
Assistant Teaching Professor
College of Nursing
Brigham Young University
Provo, UT*

Purposes/Aims: The purpose of this research is to determine if physical activity, as measured by the Physical Activity Vital Sign (PAVS), is a predictor for 30-day heart failure readmissions rates.

Rationale/Conceptual Basis/Background: Heart failure costs Americans billions of dollars a year and takes a toll on patients afflicted by the disease. Recent changes in how healthcare systems and providers are reimbursed have motivated them to find new ways to prevent heart failure readmission. There is no cure for heart failure so healthcare providers try to help patients manage their symptoms. Physical activity is one of the interventions recommended in the management of heart failure. The PAVS is a tool that is easily administered and has significant validity in assessing the average amount of physical activity patients do each week.

Methods: A retrospective chart review will be used to evaluate patients who had a heart failure admission between January 1, 2016 and August 31, 2018 and were subsequently readmitted within 30 days. We will use multiple regression to examine how the PAVS relates to whether patients admitted initially with heart failure are subsequently readmitted within 30 days of discharge. Multiple regression will be used, rather than logistic regression, as we will make the 30-day readmission rate a continuous variable based on the number of days to readmission (0, 1, 2, 3...30, and 31+). We will control for age, sex, race, ejection fraction, body mass index, length of hospital stay, brain natriuretic peptide, and compliance with heart failure measures (evaluation of left ventricular systolic [LVS] function, angiotensin-converting-enzyme inhibitor or angiotensin II receptor blocker for LVS dysfunction, heart failure discharge education, smoking cessation, beta blocker prescription, and follow up appointment scheduled within 7 days of discharge).

Results: Sample demographics will be reported using a simple description. If patients had a 30-day readmission after an initial heart failure admission, researchers will state the time to readmission in days for different PAVS scores. Further data analysis will be done and researchers will report if PAVS is a predictor of 30-day readmission rates for patients with heart failure.

Implications for Nursing Practice/Further Research: If physical activity, as measured by PAVS, reduces 30-day heart failure readmission rates, health care providers may be able to tailor specific physical activity recommendations to their patients. If the results suggest that physical activity increases 30-day heart failure readmission rates, further research may be necessary to determine if physical activity in a controlled setting, or possibly a different type of physical activity, would prove more beneficial. If there is no change in 30-day heart failure readmission rates with different activity levels as measured by PAVS, perhaps PAVS is not a predictor by itself, or possibly changing the setting, or type, of physical activity would provide differing results. Nursing implications include teaching patients about the role physical activity plays in heart failure, supervising and managing the physical activity, and advocating for the use of appropriate physical activity as a useful intervention in the management of heart failure.

HEART FAILURE

Nursing Visits to Improve Transitions of Care in Ambulatory Heart Failure Patients after Hospital Discharge

Youjeong Kang, PhD¹, MJ Tran, MBA, BSN¹, Dawn Young, Manager², Juan Hernandez, RN² and Josef Stehlik, MD³, (1)College of Nursing, University of Utah, Salt Lake City, UT, (2)University of Utah, Salt Lake City, (3)School of Medicine, University of Utah, Salt Lake City

Purpose/Aims: The goal of this quality improvement project is to enhance heart failure (HF) patient disease management through the continuum of care from the inpatient setting to discharge to home. The aims were to assess the needs of care upon hospital discharge through nursing visits in ambulatory HF patients.

Background: HF patients are at high risk for rehospitalization. One contributing reason could be a lack of continuum of care upon hospital discharge, particularly for ambulatory HF patients who do not qualify for post-acute care services. We hypothesized that ambulatory HF patients could benefit from home care services similar to home-bound patients, and that home care services would allow for a better transition from the inpatient setting to the home setting.

Description of the Undertaking: The site of this project is a tertiary hospital located in an urban area that offered two nursing visits to ambulatory HF patients within 10-days after hospital discharge at no cost (billing to insurance waived). Nursing visits included standardized patient education received from the hospital, and assessment using a Nurse Medication Management Form based on American Heart Association recommendations. The form included questions related to medication management, self-management, and adherence to HF behaviors. We analyzed the responses to each question and explored common trends based on nurses comments provided in addition to the answers to the structured questions.

Results: Forty one patients enrolled in the study and had the initial visit. The mean age was 62 years, 42% were female, and 80% were White. The initial visit served to ensure patients retained education they received while they were in the hospital. At the initial visit, nearly 70% of patients had gaps in understanding or retention of the information provided at hospital discharge. Several patients with chronic HF for an extended period of time had poor awareness of how to self-manage independently. The patients indicated discharge teaching not always allowed for addressing of all the questions they and their caregivers had. The nursing visits showcased a significant benefit to patients, in terms of positive reinforcement about the importance of disease management at home. A second visit was done in a subset of patients to ensure they still retained information that they received at the initial visit. However, patients often declined to have the second visit, with the leading reasons being declining health or indicating one visit was sufficient.

Implications for Translation to Practice/Further Research: Overall, visiting nurses were able to review all the questions and to provide reinforcement and education on HF and to ensure patient understanding of the information provided. Nursing visits for ambulatory HF patients aimed at improving patient understanding of their disease, and favorable lifestyle modifications after hospital discharge show promise in reducing rehospitalization. This quality improvement project suggests that post-discharge nursing visits for ambulatory HF patients may provide important benefits.

HEART FAILURE

Relationship of Heart Rate Variability Measures to Gastrointestinal Microbiome Taxa

Margaret Heitkemper, PhD, RN, FAAN
Professor, Department of Biobehavioral Nursing and Health Informatics
University of Washington, Seattle, WA
heit@uw.edu

Kevin Cain, PhD
Office of Nursing Research
University of Washington
Seattle, WA

Kendra J. Kamp, PhD, RN
Department of Biobehavioral Nursing and
Health Informatics
University of Washington
Seattle, WA

Pei-Lin Yang, MS
Department of Biobehavioral Nursing and
Health Informatics,
University of Washington
Seattle, WA

Bob Burr, PhD
Office of Nursing Research
University of Washington
Seattle, WA

Objective: The sympathovagal balance of the autonomic nervous system (ANS) plays a role in regulation of gastrointestinal function. The ANS is an important connector between the gut and the brain or what is referred to as the ‘gut-brain axis’. In persons with irritable bowel syndrome (IBS), a common functional disorder characterized by abdominal pain and changes in defecation pattern, there is evidence to indicate that subgroups of patients have altered ANS balance. At the same time, it has been suggested that persons with IBS have alterations or reductions/abundances of specific taxa that are linked to stool consistency and transit time. Our aims were to describe the relationship of night-time heart rate (HR) and heart rate variability (HRV) indicators with microbiome diversity and previously identified taxa family and genera. Our hypothesis is that bacterial taxa associated with stool consistency measures are also associated with night time HR and ANS activity indicators.

Methods: A descriptive, correlational design was used to describe the relationship of night time HR and HRV to preselected fecal microbial taxa in a sample of women with IBS (Rome III diagnosis) enrolled in a clinical trial of behavioral therapy. Samples were collected at the baseline assessment. Women were recruited from the community and clinics. They completed questionnaires and were instructed on the use of a daily diary, stool sample collection, and Holter recording protocols. Sample collection was completed over a two-week period. The HRV variables of interest included average heart rate (HR); high frequency (HF) which reflects vagal activity; low frequency/high frequency (LF/HF) a ratio of sympathetic plus parasympathetic over parasympathetic; the standard deviation of 5-minute block averages (SDANN) which is a measure of changes in HR due to cycles longer than 5 minutes; and pNN50 which represents the proportion of NN50 (number of pairs of successive NNs that differ by more than 50 ms) divided by the total number of NNs.

Results: Women were on average 39.0 (SD 15.1) years of age, college educated, and partnered. The majority of participants were IBS-diarrhea based on Rome III criteria. The average length of time since diagnosis was greater than 5 years. Of the 16 family and genus level fecal bacteria previously associated with stool consistency, 4 had significant ($p < .05$) relationships with indicators of night-time ‘free-living’ ANS activity. Lower night-time HR or greater pNN50 suggestive of greater parasympathetic activity were noted in those with greater abundances of *g.Christensenella*, *g.Roseburia*, *f.Porphryomonadaceae*, *g.Anaerofistus*, and *g.Butyricimonas*, Higher night-time HR and lower pNN50 and were related to Firmicutes/Bacteroidetes ratio. These relationships persisted when controlling for body weight, age, and psychological distress levels. There were no significant relationships between bacteria taxa and high frequency or low frequency/high frequency ratio.

Discussion: It is not known whether the relationships among bacterial taxa and indices of ANS reflect slower transit and thus, the opportunity for selected bacteria to flourish or are the result of bacterial metabolite-host interactions. Additional studies considering dietary intake are needed. The results provide insight into one mechanism by which the brain and gut communicate.

Funding: National Institute of Nursing Research Grant 1R01NR014479

Abstracts of Poster Presentations

INFORMATICS AND TECHNOLOGY

INFORMATICS AND TECHNOLOGY

Using Short Message Services (SMS) to Reduce No-Show Rates: An EBP Project

*Fernando Serrano, EL-MSN, RN, PCCN
DNP/PMHNP Student
University of San Diego
San Diego, CA*

Background: No-shows (NS) are correlated with reduced treatment efficacy, increased financial burden on medical institutions, and early treatment terminations for therapy. NS occur for a variety of reasons and appointment compliance within outpatient mental health clinics has a wide variance with some clinics reporting MAs ranging from 15% to 50%.

At the project clinic, MAs rate is 18% among Mental Health Nurse Practitioners (MHNPs) and 33% with therapy appointments. This clinic uses an automatic phone call service reminder for appointments.

Purpose of Project: Providers and staff will offer patients the ability to sign up for Short Message Services (SMS) appointment reminders. Patients who agree to SMS will receive text messages to their phone pending appointments on the day prior. The goal is to increase SMS utilization with patients and reduce MAs by 20% with MHNP patients.

Framework/EBP Model: The IOWA model was used for this project.

Evidence-Based Intervention: With continual reduced costs and a subsequent massive increase in mobile phone technology use by the general population, SMS has become a new mainstay for direct communication. SMS appointment reminders have been implemented in mental health, radiology, physical therapy, and dentistry with each setting experiencing a significant decrease in NS.

Implementation: After clinic IRB approval is obtained, SMS teaching materials and printouts will be prepared. Qualitative statements from PMHNPs and staff regarding attitudes and barriers regarding SMS will be collected before and after the project. Pre-data collection includes surveying MAs rates and SMS sign up among PMHNP patients for the previous 8 weeks.

15 to 30-minute teaching sessions will take place with PMHNP, PMHNP students, and front desk staff. SMS flyers will be posted in patient waiting rooms. Data will be collected weekly for 8 weeks examining SMS sign up rates, MAs, and provider/staff SMS compliance with offering SMS to patients. Data will be continually collected on secured hard drives on excel spreadsheets. Case identifiers will be limited to alpha numeric codes with no personal information attached.

Evaluation Results: We anticipate at least 50% of the providers/students/staff will report that they are offering SMS to patients at the end of the first 4 weeks and at least 80% by the end of 8 weeks. We anticipate at least 70% SMS sign up with patients and a reduction of NS by 20%.

Implications for Clinical Practice: We anticipate PMHNP providers and staff at the clinic will offer SMS sign up as part of standard policy and procedure. As SMS sign ups grows, NS will decrease. With a significant decrease of NS among PMHNP patients, SMS offerings may be implemented with resident and marriage family therapist patients to further decrease MAs and NS.

Conclusions: Utilizing SMS appointment reminders provides an additional deterrent for NS. The brevity, efficiency, and cost-effectiveness of SMS allows patients to quickly be reminded of upcoming appointments with the option to confirm or reschedule as needed. SMS helps increase appointment attendance while reducing provider nonproductive hours from NS.

INFORMATICS AND TECHNOLOGY

The Feasibility of Using Virtual Reality for Acute Pain Following Kidney Donation

Nathan J. Dreesmann, BSN, RN, School of Nursing; Hilaire J. Thompson, PhD, RN, ARNP, CNRN, AGACNP-BC, FAAN, Professor, Biobehavioral Nursing and Health Informatics, School of Nursing; Diana Taibi Buchanan, PhD, RN, Associate Professor, Biobehavioral Nursing and Health Informatics, School of Nursing; Hsin-Yi (Jean) Tang, PhD, RN, PMHNP-BC, APRN, Assistant Professor, Psychosocial and Community Health, School of Nursing; Thomas A. Furness III, PhD, Professor, Industrial and Systems Engineering, College of Engineering

*University of Washington
Seattle, WA
nathand1@uw.edu*

Purpose/Aims: This study will examine the feasibility and acceptability of using an immersive virtual nature environment for acute postoperative pain management of living kidney donors in the hospital. The specific aims of this feasibility study include: 1) determining the feasibility of recruiting, enrolling, and retaining donors in a virtual reality study, and 2) determining the acceptability of measures for pain management as well as areas for future improvement in implementation of the virtual environment.

Background: The kidney is the most commonly-transplanted organ in the United States, making up nearly 60% of transplants annually. Due to better recipient outcomes, living kidney donation is preferred over cadaveric. Pain after kidney donation surgery is common. If not properly addressed, a donor's post-operative pain can prolong hospitalization and may become chronic pain. Opioids are frequently prescribed for pain management as a standard of care, but the large number of side effects from opioid consumption, rising rates of chronic opioid use after surgery, and deaths due to opioid overdose have created an urgent need to develop non-pharmacologic strategies to manage acute pain, particularly during hospitalization. Virtual reality uses a digitally-created world into which participants can be immersed with a headset, using visual and auditory stimuli, to alleviate pain. Further, virtual reality has been utilized for experimental- and procedure-induced pain, but little is known about its use for acute, post-operative pain.

Methods: This feasibility study will employ a quasi-experimental design with qualitative and quantitative components based on Dodd et al's *Revised Symptom Management Conceptual Model*. Thirty adult donors will be randomized into one of two groups at the time of enrollment: fixed VR intervention time of 15 minutes ("Group 1") or patient-determined time ("Group 2") up to 30 minutes. Once immersed using the VR headset, study participants will interact with, and navigate through, the virtual environment using two handheld controllers. Semi-structured interviews will be used to capture patient experience of pain management as well as experience of the virtual environment. Two validated measures for acute pain will be compared pre- and post-operatively, and depression, degree of "feeling present" in the virtual environment, and nausea (simulator sickness) will be assessed in each group. This feasibility study's results will address the acceptability, demand, implementation, practicality, adaptation, integration, expansion, and exploratory efficacy testing of utilizing virtual reality for acute, post-operative pain management in the hospital.

Results: Pending.

Implications: This feasibility study will add knowledge regarding virtual reality's effect on pain in post-operative populations. It will also provide new insights into virtual reality's potential duration of effect on pain and anxiety, and extend our understanding of virtual reality as a non-pharmacologic therapy for pain management. This study will establish the investigator's body of research on an intervention with the long-term potential to impact important outcomes, including reduced length of stay, reduced opioid use and associated risks, and improved patient outcomes.

Funding: This project is supported by the NIH/NINR T32 Aging and Informatics Training Program, grant number: 5T32NR014833.

INFORMATICS AND TECHNOLOGY

Patient's Utilization of Health Information Technologies for Disease Self-Management

*Mahmoud Altawalbih, MSN, RN
PhD Student
Hahn School of Nursing and Health Sciences
University of San Diego
San Diego, CA*

Purposes/Aims: The purpose of this study is to explore the factors that impact patient utilization of Health Information Technologies for disease self-management. We aim to examine the relationships between patient demographics and their utilization of health information technologies in relation to disease self-management and Task-Technology Fit.

Background: Nursing have had a long history of concern about patient activation and empowerment. The rapid growth of Health Information Technologies (HITs) provides patients with greater opportunity to take control over their health. HITs utilization has been proven to be a critical component of disease self-management and can result in positive outcomes. Its widespread adoption and utilization is still relatively low among patients with chronic disease. It is important to understand the factors that may impact HITs utilization such as the perceived Task-Technology Fit (TTF). A very limited number of studies have examined the relationship between HITs utilization and the perceived fit between task and technology in the context of Task-Technology Fit theory.

Methods: A quantitative descriptive correlational research design will be used for this data-based study. Data from the most recent Health Information National Trends Survey (HINTS5, cycle 2) collected in 2018 will be used for this study, (n= 3,504).

Results: To be determined.

Implications: Findings of this study may inform a better understanding of Task Technology Fit factors. This new knowledge may influence HITs developers to include the patient perspective in future designs. Study findings may also assist researchers in developing tailored interventions that are driven by the unique individual patient technological needs for disease self-management, which in turn, can promote patient safety, improve health outcomes, and enhance the utilization of such technologies.

INFORMATICS AND TECHNOLOGY

Clinical Research Integration in the Electronic Health Record: A Systematic Review

Elizabeth Johnson, MS-CRM, BSN, RN
Doctoral Student
College of Nursing
University of Arizona
Tucson, AZ

Jane M. Carrington, PhD, RN, FAAN
Associate Professor
College of Nursing
University of Arizona
Tucson, AZ

Purpose: Clinical trials have become more commonplace as treatment options across indications and populations. As clinical trial participants are integrated into all aspects of healthcare delivery- from hospital systems to community practice- organizations are tasked with appropriate documentation and maintenance of human subject protections within Electronic Health Records (EHRs). Here we present the results of a systematic review seeking to understand the common elements necessary for EHR integration of clinical research, including structural, functional, and procedural core requirements for optimal trial conduct.

Background: Clinical trial information impacts EHR progress notes, provider orders, nursing assessments and care, along with ancillary discipline utilization depending on the drug or device study or observational research data capture. While the clinical management is the routine function of the EHR, structuring EHRs to include research related information will support optimal patient care to incorporate protocol limitations and preventable research participant withdrawal from trial. Lack of appropriate capture of information can result in protocol deviations, participant injury, and federal/research sponsor citations for non-compliance.

Review Methods: Review of literature was conducted using PubMed and CINAHL, to identify relevant publications that described use of the EHR to directly support conduct of a research trial. Publication titles and abstracts were screened for relevance, with articles then being pulled for consideration, reviewing full-text for research question, methods, findings, and research setting. Thirty-five publications initially emerged then after thorough inclusion criteria review, with fifteen publications were ultimately selected. Publications that were included required direct alignment to research related EHR applications.

Results: Three thematic groupings arose from the analysis: functional (technological or systematic needs), structural (legal and/or regulatory requirements), and procedural components (clinical trial conduct and operations). While EHRs were initially designated for use in capturing clinical patient movements for billing purposes, the same core system functions may also be leveraged for clinical trial participant management. Collecting information from individual patients but not collecting specifically for research documentation poses challenges when attempting to standardize data capture. The present-day abilities of EHRs to support clinical trials (especially observational), include: feasibility assessments, performance improvement, guidance adherence, and safety surveillance.

Implications: Without a centralized means of providing clinicians with research related information that impacts care, participant injury or withdrawal will be a greater possibility. With the understanding of the current landscape of EHR adaptation of clinical research information, further research is required to develop an optimal model of research related integration within commercially utilized EHRs, supporting standardization of information capture and promoting efficiencies in highlighting research information critical to participant care.

INFORMATICS AND TECHNOLOGY

Increasing Hospitalized Limited English Proficient (LEP) Patients' Communication

Frances Kathleen Lopez-Bushnell, APRN, EdD, MPH, MSN
Director of Nursing Research
Nursing
University of New Mexico Hospital
Albuquerque, NM

This was an IRB approved pre/post study that measured the effect of education on Interpreter Language Services (ILS) with 198 hospitalized Limited English Proficient (LEP) patients admitted to a 27-bed inpatient medical-surgical unit at a Southwest level 1 trauma teaching hospital. The educational intervention covered Interpreter Language Services (ILS), including institutional regulatory requirements, best practices, and extant resources. This intervention also targeted health 75 care providers on a medical-surgical unit including 37 nurses and patient care technicians (PCTs) and 38 internal medicine (IM) physicians were surveyed before and after the educational intervention.

Over twenty-five million people in the United States are Limited English Proficient (LEP) (Antila, A. et al., 2017). Language barriers pose a great threat to effective communication in hospitals and clinics, and nursing staff (nurses and patient care techs) must use interpreters and/or interpreter services equipment in order to provide appropriate care to all LEP patients (Lee, J.S. et al., 2017). Hospitalized LEP patients have a higher risk of adverse outcomes such as hospital readmissions (Boyle, 2017). In addition, language barriers have been shown to be a threat to quality of hospital care and specialty care access (Ezeonwu, 2018).

A total of 198 LEP patient surveys were completed and included in the analysis. Post educational intervention there was an 18% increase (from 56% to 74%, $p < 0.01$) in the number of patients reporting that nursing staff always use interpreter language services or interpreter services equipment while explaining medications, tests, labs diets and daily goals. There was an 18% increase (from 51% to 69%, $p < 0.01$) in the number of patients reporting that nurses always use interpreter language services or interpreter services equipment when they communicate regarding activities of daily living. There was a 16% increase (61% to 77%, $p = 0.02$) in the number of patients reporting that physicians always use interpreter language services or interpreter services equipment when they communicate, and a 22% increase (from 66% to 88%, $p < 0.01$) in the number of patients reporting that their communication needs are always being met.

This study demonstrated that an in-person educational intervention was effective in increasing use amongst health care providers of interpreter language services and interpreter services equipment. The survey results also demonstrated a significant increase in the percent of LEP patients that felt their communication needs were always met. The health care provider surveys indicated that knowledge of interpreter services equipment was very high before and after the educational intervention amongst nursing staff, i.e., nurses and patient care techs. For physician, it increased significantly after said education. Although LEP patients and providers prefer an in-person interpreter, that is not always realizable. That is why the remote modality (i.e., video and telephonic interpreting) is available and indispensable to filling the communication gap. Continued and required education for all health care providers is necessary to effectively meet the communication needs of all LEP patients.

INFORMATICS AND TECHNOLOGY

Work Intensity and Perceived Appropriateness of Patient Assignment

*Deborah Eldredge, PhD, RN
Division Director, Quality, Research and
Magnet, Patient Care Services
Oregon Health & Science University
Portland, OR*

*Dana Womack, PhD, RN
Postdoctoral Research Scholar
Department of Medical Informatics &
Clinical Epidemiology
Oregon Health & Science University
Portland, OR*

*Cheri Warren, MSHI RN-BC
Manager, Nursing Informatics
Information Technology Group
Oregon Health & Science University
Portland, OR*

*Mariah Hayes, MN, RN
Director of Nursing
Surgical Services
Oregon Health & Science University
Portland, OR*

Purposes/Aims: The purpose of this study is to evaluate associations between EHR-generated work intensity scores and RN perceptions of appropriateness of patient assignment.

Rationale/Conceptual Basis/Background: Registered Nurses (RNs) on hospital-based patient care units manage ever-changing patient situations and variable workload. Workload estimation modules within electronic health record (EHR) systems are able to produce dynamically-generated work intensity scores. However, there is a lack of published literature regarding relationships between perceived appropriateness of RN patient assignment and work intensity estimates at the work shift level.

Methods: A descriptive study, with comparisons across unit type, was conducted during an 8-week period on six patient care units at a large academic medical center in the Pacific Northwest. Work intensity scores, as generated at shift start, were exported from an EHR system. Four hours into the work shift, RN perceptions of patient assignment appropriateness were verbally collected from frontline RNs using a 6-point Likert scale. A narrative explanation of RN rationale for somewhat disagree, disagree and strongly disagree with appropriateness of patient assignment was collected. Narrative explanations were compared to task categories with highest work intensity sub-score values to assess thematic correspondence.

Results: Preliminary assessment reveals weak correlation between work intensity scores and perceived appropriateness of patient assignment. Overall, as work intensity scores increase, nurses are less likely to agree that their assignment is appropriate. Tasks described in RN narratives are frequently similar in topic to work intensity sub-score categories with highest point values, suggesting that face validity of work intensity scores is present. However, variability in RN appropriateness rating is observed across similar work intensity score ranges.

Implications for Translation to Practice/Further Research: Work intensity scores may be used to enhance creation of equitable patient assignments. However, additional research is required to identify workplace factors that influence RN perception of assignment appropriateness that may not be reflected in EHR-based estimates of work intensity.

INFORMATICS AND TECHNOLOGY

Designing the Learning Ecosystem to Ignite Education Using Technology

*Lindsay Benes, PhD, RN, CNS
Associate Dean, Graduate Education
School of Nursing
University of Portland
Portland, OR*

*Joanne Olsen, PhD, RN, CPHQ, CPSO
Director, Nursing Innovation
School of Nursing
University of Portland
Portland, OR*

*Ben Kahn, BA
Academic Technology Specialist
Academic Technology Services
University of Portland
Portland, OR*

*Marie Erb, MS, BS
Academic Instructional Designer
Academic Technology Services
University of Portland
Portland, OR*

Faculty and learners encounter an array of technology applications (apps) in the learning eco-system.

Aims: This IRB approved research is aimed to: (1) design an evaluation framework to standardize the selection of apps for the graduate level learning eco-system and (2) foster stakeholder engagement in pedagogical software app evaluation and selection.

Background: Equipping graduates to enter the workforce with digital skills brings innovation opportunities to teaching. However, digital apps proliferation without strategy and governance is chaotic for faculty, learners, and academic technology colleagues. In a review of the literature, no substantial research denoting specification of evaluation criteria for graduate education level app selection was identified. Broad categories for app use (e.g. content delivery, student engagement, assessment, etc.) and app framework criteria (e.g. accessibility, usability, cost, etc.) was captured.

Methods: To accomplish the aim of a standardized framework design for app selection, academic leaders engaged in a 3 round iterative eDelphi process to design an online graduate faculty app portfolio survey. The baseline survey specified the substantive categories of app use and framework models. To accomplish stakeholder engagement in app evaluation and selection, the survey results will be used to design intentional exemplars that exemplify the characteristics of the app use and framework criteria. The exemplars will be employed to capture the experience of faculty working with the selected app tools using overt participant observation. The observations will be collected with a one-page form by trained observers at three points during apps employment under arranged controlled pedagogical conditions.

Results: The results will be used to purge multiple apps for the same pedagogical purpose in the graduate program.

Implications: Nursing students, faculty and academic technology colleagues will be able to reallocate app infrastructure learning time to curriculum academics.

Funding: This research is being funded by the University of Portland Ignite Grant for Faculty Innovation in Teaching and Learning.

Abstracts of Poster Presentations

ISSUES IN CHILDHOOD

ISSUES IN CHILDHOOD

A Gap Analysis: Desired Scope of Services for a School-Based Health Center

*Clarissa Riches, RN, BSN
Doctorate of Nursing Practice Student, Family Practice
School of Nursing
Pacific Lutheran University
Tacoma, WA*

Background: A school-based health center (SBHC) is a health clinic that is located in or near a school and provides primary health services to children. SBHCs increase access to quality healthcare to school age population. Communities have shown positive health and education outcomes including increases in graduation rates, attendance, college preparation, reproductive health education, immunization completion, and decrease in risky behaviors by students who utilize services at SBHCs.

Setting: A new collaboration between a school district and healthcare system in the Pacific Northwest anticipate opening a new SBHC at an alternative high school during the 2018-2019 school year. This high school serves 400 students per year, with 200 students at a time due to high rates of turnover. On-site daycare is provided for infants and toddlers of students and staff which serves 20-25 children. This high school serves an underserved population with a free and reduced lunch rate of 98% and is comprised of 97% minority ethnicities. This high school offers an adjusted class schedule to complete more classwork credits in a shorter time frame. Additionally, credits can be earned through work-based learning programs, online classes, independent study courses, and volunteer hours.

Purpose and Aims: The purpose of this project is to assess the perceived health needs of the daycare and student population and desired scope of services to be provided by a new SBHC. This project aims to determine scope of service to be provided, provide outreach to SBHC community, and promote communication and coordination between key stakeholders.

Methods: A gap analysis will be completed by distributing a survey to students, parents, and educators. The survey will be distributed electronically and in paper format. Students will be provided surveys in paper format to ensure parental consent. Parents and educators will be given the option of paper or electronic format to help increase survey response. Participant and parental consent will be obtained. The school district Institutional Review Board (IRB) and Pacific Lutheran University (PLU) Human Participant Review Board (HPRB) approval is pending.

Outcomes: Data analysis will be completed to evaluate relationships between survey participants demographic information and perceived and desired scope of services. The goal sample size to obtain will be 100-200 participants. This will provide adequate power at a confidence level of 95%, with a 5% margin of error. Descriptive statistics will be employed as appropriate based upon the variables.

Conclusions: This project aims to ensure this SBHC will provide culturally competent, patient-centered care. This method can be used in other communities to prepare and implement the SBHC model of care and can increase access to quality healthcare for school age children.

ISSUES IN CHILDHOOD

Best Practices in Equine Assisted Therapies for At-Risk Youth

Allison Meaux
BS Nursing Honors Student
University of Arizona
College of Nursing
Tucson, AZ
ameaux@email.arizona.edu

Melissa M. Goldsmith, PhD, RNC
Clinical Associate Professor
University of Arizona
College of Nursing
Tucson, AZ

Kaylyn C. Grammater, BSN, MSN
Clinical Instructor
University of Arizona
College of Nursing
Tucson, AZ

Beth A. Lee, MSN
Clinical Instructor
University of Arizona
College of Nursing
Tucson, AZ

Purpose: To develop evidence-based practice recommendations for nursing professionals, school counselors, and behavioral health specialists when referring at-risk youth to Equine-Facilitated Learning (EFL) programs and Equine-Assisted Psychotherapy (EAP).

Background: Developmentally, adolescents are at risk for developing unhealthy lifestyle choices and coping mechanisms. These include but are not limited to: drug and alcohol use and abuse; eating disorders; suicide or suicidal ideation; sexual acting out; aggression; withdrawal and isolation; school-related problems; and family problems. Health and school professionals need to be aware of interventions that can foster an at-risk youth's development of resiliency and healthy coping mechanisms. Interventions that are gaining evidence-based support included EFL programs and EAP. These programs and this therapeutic modality facilitate a client's interaction with horses in a controlled and healing environment. These experiential therapies provide youths with a greater range of emotional wellness and relational skills than traditional classroom counseling. Involving horses in therapy sessions increases the participants' adaptive qualities and confidence in self. Furthermore, participation has proceeded a decreased rate of youth criminalization and the amount of drug use within the year following the therapy. Horses are unique animals to use in therapy due to their size, herd animal instincts, and their ability to mirror participant internal emotion. The uniqueness of this experiential therapy is an effective alternative to traditional therapy.

Approach to Practice: The best practice recommendations are based on a literature review conducted through a search on PubMed with the following keywords: *at-risk youth*, *adolescents*, *equine*, and *psychotherapy*. The articles included in this search were published from 2007 to 2018. Eight articles were included in the literature review portion of this thesis.

Outcomes: The proposed best practice recommendations for referring clients to EFL programs include choosing a program that follows Equine Assisted Growth and Learning Association's (EAGALA) guidelines, such as the required partnership of a certified mental health professional and equine specialist, use of a group therapy setting, an inclusion of a reflection period, and hosts weekly sessions. The recommendations also include the identification of clients as potential candidates that would benefit from EFL. Providing education to professionals who work with at-risk youth will equip them with an alternative mode to meet the needs of this population.

Conclusions: These best practice recommendations have the potential to educate nursing professionals, school counselors, and behavioral health specialists on how to refer at-risk youth to an alternative therapy, EFL. As more research on EFL is conducted and published, the guidelines can be more intricately defined and professionals working to address the mental health wellness needs of at-risk youth can feel more confident in referring clients to equine facilitated therapy.

ISSUES IN CHILDHOOD

Social Marketing to Reduce the Age of First Dental Visit for American Indian Children

*Laura S. Larsson, PhD, MPH, BSN
Associate Professor
College of Nursing
Montana State University
Bozeman, MT*

Purpose/Aims: Reducing the average age at first dental attendance is a critical component in preventing early childhood caries, reducing fear of the dentist, and promoting proper home care behaviors.

Background: American Indian children have the highest level of tooth decay when compared to all other groups and have four times the level of decay than their white, non-Hispanic counterparts.

Methods: Using community-engaged research methods, including formal and informal listening sessions, a culturally-relevant pamphlet and video message were created to 1) improve oral health literacy for parents and caregivers of infants and 2) promote taking the infant to the dentist with the eruption of the first tooth.

Results: Participants ($n = 28$) in the Women, Infant, and Children Clinic (WIC) in a rural, American Indian community completed surveys before and after viewing the pamphlet and video. Exposure to the intervention set yielded significant changes on five measures of behavior change (Precaution Adoption Process Model $p < .001$, Cohen's $d = 0.81$; Knowledge $p < .001$, Cohen's $d = 1.40$; Risk-perception $p < .001$, Cohen's $d = 0.78$; Self-Efficacy $p = .02$, Cohen's $d = 0.46$; Intention $p = .004$, Cohen's $d = 0.59$). The video message will play in six waiting-rooms in the community health clinic throughout Federal Fiscal Year 2018. The pamphlet will be distributed through WIC, home-visiting and other outlets. Medicaid billing codes will be used to further evaluate the intervention for reducing the average age at first dental attendance.

Implications: Contemporary and culturally-relevant educational tools that do not place additional burden on the provider/client interaction may be an efficient way for nurses to help reduce pediatric oral health disparities in vulnerable communities.

ISSUES IN CHILDHOOD

Parental Assessment of Preschool Child Weight and Actual Weight Classification

*Tanna Woods, BSN, MSN, PhD Candidate, RN, Evaluator
Western Governor's University, Salt Lake City, UT*

Mary Nies, PhD, Adviser, Idaho State University, RN, FAAN, FAAHB

Purposes: The study's purpose was to determine percentile accuracy of parental classification of preschool children's weight and identify which of three methods of weight classification was more accurate.

Background: Childhood obesity is a problem that leads to long-term health risks. It is best-treated in early childhood when children are teachable and when habits/tastes/perspectives are still developing. The preschool age, which is an ideal target for prevention and intervention strategies, includes parents as important considerations. Parents have been noted to misclassify child weight between 20% and 29% percent of the time. Misclassification is as high as 81.4% for children who are clinically obese. Correct classification is important for providing preschool children with the best interventions to maintain a healthy weight.

Methods: Parents were recruited from daycares and preschools at three sites. The sample included 31 children ages 2 to 5. The questionnaire had demographic questions, and three methods of parent's classification of child weight (pictorial/visual, Likert scale with written description, and numeric report of child weight). The visual scale has seven images of children (per gender) that range from severely underweight to obese. The parent selected the image most like their child. The Likert scale had parents select from a form the child's weight status with choices ranging from underweight to obese. The third method had the parent write how much they thought their child weight in pounds. Accuracy of weight was determined by comparing the parental assessment to the actual body mass index (BMI). BMI was identified using investigator-assessed child weight using a digital scale and child height using a stadiometer. This information and the child's age were used to identify the body mass index and corresponding percentile for each child.

Results: Data were analyzed using STATA. The mean age for children was 3.8 (SD=0.71). There were 19 female children (59%) and 13 males (41%). The actual child weight classifications in the sample were 71% healthy weight (n=22), 6.5% (n=2) underweight, 16% (n=5) overweight, and 6% obese (n=2). Parents misclassification were 80% by pictorial scale, 68% by parental-reported child weight, and 31% by Likert scale. All incorrect weight classifications were due to underestimation.

Implications: Parents were less able to select the correct visual picture, which could be caused by increase in overall overweight and obesity in society. What is clear is that with all three methods, underestimation of child weight was common, and parents were better able to classify their child by selecting a written description on a Likert scale. These results inform understanding of parental classification that could be addressed through intervention and prevention to decrease obesity rates. To effect change, parents must recognize when their child's weight is outside the normal range. As nurses, we need to realize parents may not accurately perceive their child's weight. When a child presents with a weight issue or for being at risk for a weight issue, health care professionals and nurses need to gauge parental awareness of the child's current weight status to gear appropriate teaching and intervention strategies.

Funding: 2018 Sigma Theta Tau/Chamberlain College of Nursing Education Research Grant, number 14306

ISSUES IN CHILDHOOD

Effects of Art Interventions on Hospitalized Pediatric Patient's Outcomes

*Frances Lopez-Bushnell, EdD, MPH, MSN, APRN
Nursing Research
University of New Mexico Hospitals
Albuquerque, NM*

This pediatric IRB approved randomized control trial measured the effect of an art exercise on the relaxation and stress responses as measured by pre/post oxygen and pain levels, emotions, and heart rate of 200 hospitalized children ages 3 to 17 years at a southwestern Children's Hospital. Hospitalized children suffer emotional and physical pain due to illness and the isolation that results from being in a hospital room. Many parents and family relatives cannot visit these children due to work and family responsibilities.¹ The purpose of this research was to measure the effect of an opportunity for hospitalized children to participate in art and creative experiences and its effect on their heart rate, oxygen saturation, pain level and emotions. The objectives of this research also included the measurement of art making activities as a method for children to express themselves. Secondary endpoints were the children's art creations and interpretations of their art.

Children who are hospitalized for long periods of time are often isolated and lonely, which may result in depression and isolation. Research findings have demonstrated that art can support stress reduction². Using the Wong-Baker FACES Pain Rating Scale, heart rate and oxygen saturation, the children's psychological and physiological stress was measured. This research study measured the effect of an art experience on hospitalized children's pain, emotions, and vital signs. The hypothesis was that when an art facilitator provided children with art materials and prompts at the bedside and engaged them in art making, their stress levels would decrease. Stress levels were measured by monitoring the heart rate and oxygen saturation before and after the activity for those patients on monitors.

An ANOV was used to measure the vital signs and Wong Backer scores before and after the art intervention. Using 200 subjects with a T-Test Power Analysis (two groups), the effect size was .2 (small) with a significant level of .05 and a power of .804 with a $df = 199$, critical $t = 1.972$ and a noncentrality parameter = 2.828. The research found that children who participated in an art exercise experienced lower heart rate and increased oxygen saturation.

This study clearly indicated a physiologic relaxation response to the art activity. Stress levels were measured by the physiologic biomarkers of heart rate and oxygen saturation. There was a consistent decrease in the heart rate and an increase in the oxygen saturation level during and after the art activity. Affect and demeanor improved in almost all of the children. Giving these children an opportunity to express themselves through art clearly has a therapeutic effect physiologically and psychologically, and can become part of the healing process. Patients, families, and staff all seemed to appreciate the art activities. Parents would often use the time the art facilitator spent with the child to take a break from caregiving and frequently expressed gratitude for this service. It is important to investigate the use of non-pharmacological techniques to help children cope with stressful hospital experiences.

ISSUES IN CHILDHOOD

Public Health Nurses Enhancing Outcomes of Care Coordination among Foster Care Children

*Lisa Baughman, MSN, MS HCM, RN, FNP, PHN
Southern California CSU Doctor of Nursing Practice Consortium
California State University Fullerton
Fullerton, CA*

*Penny Weismuller, DrPH, RN, PHN
Professor & Director, Southern California CSU DNP Consortium
California State University Fullerton
Fullerton, CA*

Purpose/Aims: The purpose of this DNP project is to develop, implement, and evaluate an evidence-based nursing practice guideline at two Los Angeles County Department of Children and Family Services (LACDCFS) offices to enhance care coordination activities of public health nurses (PHN) in order to improve medical and dental compliance rates among children and youth in foster care (FC).

Rationale Background: The department's policy requires all children entering FC have a medical assessment within 24 hours of placement, a comprehensive physical exam within 30 days, and subsequent yearly exams. Dental exams are required annually beginning at one year of age. The LACDCFS medical and dental compliance goal is 90%. However, the two offices in this project have significantly lower examination completion rates below 50%. Social workers (SW) and PHNs safeguard the well-being and safety of children in FC. Improving care coordination (CC) activities through an enhanced nursing practice guideline is anticipated to assist with improving the health screening and comprehensive care for children and youth in foster care.

A Brief Description of the Undertaking/Best Practice Including the Approach, Methods or Process Used: This performance improvement project includes conducting qualitative focus groups of PHNs and SWs regarding their perceptions of challenges, barriers, and quality improvement of care coordination. Conventional content analysis of focus group responses will be done. The results from the focus group will be integrated along with best practice strategies to develop the care coordination guideline. PHNs will be educated and trained on the new practice guideline before implementation. The CC practice guideline will promote public health advocacy among PHNs in the use of public health care coordination activities to collaborate with social workers, foster parents, relative caregivers, and community providers. PHNs working in partnership with other disciplines and foster care parents will assist in facilitating the completion of children's health exams. Data analysis will include the comparison of existing data before and after implementation of the practice guideline. The data include numbers of collaboration and communication activities completed by the PHNs as well as the completion rates of medical and dental examinations.

Outcomes Achieved/Documented: In progress; data will be available at the conference.

Conclusion: This project has implications for clinical practice in care coordination. Information from the focus groups, coupled with existing evidence, is anticipated to improve care coordination practice through the implementation of a standardized practice guideline. This guideline may increase completion of medical and dental exams among children in foster care.

ISSUES IN CHILDHOOD

Adapting the Care of Pediatric Patients with Autism through the Use of an Assessment Tool

*Melissa Harrington, BSN, RN, CPN
Staff RN, Post-Anesthesia Care Unit
Seattle Children's Hospital
Seattle, WA*

*Erika Busz, MSN, RN, CPN
Staff RN, Post-Anesthesia Care Unit
Seattle Children's Hospital
Seattle, WA*

Purposes/Aims: Use the EBP process to determine best practice in the perioperative care of patients with autism spectrum disorder (ASD). Project goals include identification of environmental triggers and use of patient-specific interventions to improve patient and caregiver experience. Simultaneously, healthcare providers (HCPs) will display greater competence in identifying needs and planning patient-specific care, thereby minimizing moral distress.

Rationale/Background: Stress, anxiety, and multiple environmental stimuli may trigger patients with ASD to exhibit negative behavioral responses in the perioperative environment. The behaviors brought on by these triggers may result in distress for patients, caregivers, and HCPs. Caregivers of the child with ASD experience anticipatory stress preparing for a planned surgery due to multiple variables in the hospital environment that may trigger negative patient behaviors. The stress displayed by the patient and caregiver may leave HCPs feeling ineffective, potentially leading to moral distress.

Approach: Identification of triggers, provision of a sensory-friendly environment, and minimization of wait times are strategies known to decrease anxiety and other negative behaviors in patients with ASD. Following a learning needs assessment on ASD, all perioperative HCPs received education on the affected domains (sight, sound, touch, smell, and taste) of ASD, establishing that provision of a sensory friendly environment will improve care for these patients. The current state of this project is the ongoing use of a behavioral and sensory assessment tool developed for this project, completed with the caregiver's input. The tool identifies: (a) affected domains; (b) severity of affected domains; (c) potential triggers; (d) prior experiences with sedation procedures and (e) ideas for successful interventions. The tool uses caregiver expertise to identify the patient's unique needs. Information gathered from the tool is used to create a patient-specific care plan that is available to HCPs on the day of the procedure, with the goal of minimizing negative behaviors.

Outcomes Achieved/Documented: Metrics used to evaluate intervention outcomes include: (a) pre-education and post-intervention surveys to assess HCP knowledge and satisfaction when caring for patients with ASD; (b) collection of HCP post-care feedback via an audit tool; (c) incidents of behavioral support team use; and (d) post-procedure survey to measure patient and caregiver satisfaction with the assessment tool, plan of care, and overall experience. Conclusions: Addressing the specific behavioral and sensory needs of children with ASD will improve caregiver and patient experience on the day of surgery by use of the behavioral and sensory assessment tool in conjunction with the creation of a patient-specific plan of care. In addition, reducing negative patient behavioral responses to triggering events will decrease moral distress among HCPs.

ISSUES IN CHILDHOOD

A Partnership to Develop a Community Outreach Program for Thalassemia Families

*Geri Schmotzer, RN, MPH, PhD, PHNA-BC, Assistant Professor, School of Nursing
Pamela Kohlbray, PhD, RN, CNL, Associate Professor*

Robert Yamashita, PhD, Associate Professor, Science and Society Studies

*California State University, San Marcos
San Marcos, CA*

Purposes/Aims: The purpose of this project is to develop a collaboration between California State University San Marco's School of Nursing (CSUSM, SON), Rady's Children's Hospital's Cancer and Blood Disorders Clinic (CBCD), and the University of California, San Francisco Benioff Children's Hospital Oakland (UCSF, BCHO) and CSUSM Community Engagement. The purpose of this collaboration is to create a model to cultivate a patient-led community support group which will advocate for Thalassemia patients and families in San Diego, California. An interdisciplinary collaboration which includes nursing student interns will provide opportunities for the Thalassemia community of patients and families to connect with others facing similar challenges. The goal is for the community to hold events and meetings that will foster a sense of empowerment in understanding their disease and support with their chronic illness experiences.

Rationale/Background: Thalassemia is an inherited blood disorder where the body makes an abnormal form of hemoglobin. These patients required frequent transfusions from infancy through adulthood. Patients with these types of chronic diseases have better physiological outcomes when they are able to identify with others who experience the same difficulties. Support groups are one way to facilitate this interaction. Research has shown that patients who have support groups have better outcomes. Furthermore, this project addresses the HP2020 goals to prevent illness and disability, increase outreach and awareness, and ensure patients have a patient-centered medical home.

Undertaking/Best Practice/Approach/Methods/Process: To support the needs of Thalassemia patients, nursing student intern will work with the CBCD clinical team to perform a community assessment and interview patients and their families. This will create an opportunity to understand the specific needs of this population. To provide these patients with a patient-centered medical home, interns will facilitate joint meetings with community partners and the clinical teams to develop an effective patient support organization.

Outcomes Achieved/Documented: Expected outcomes are to provide the patient and families with a community outreach model. Interns will complete a community assessment. Interns will work with patients and families to establish regularly scheduled meetings between providers and community partners. Lastly, they will establish provider/patient lead activities to encourage the development of a community support group. Interns will disseminate the patient-centered support group development model in conferences and manuscript form. This model will be used to create future support groups for other blood disorder types in the clinic.

Conclusions: Project partners will build the trust of the Thalassemia community to develop a patient led support group which will increase patient-centered communication, create the access to health services, and develop and nurture future community leaders in the Thalassemia community. This project will meet HP 2020 goals to prevent illness and disability, increase community-based organizations, and provide access to a patient-centered medical home.

Funding: California State University San Marcos, 2018 CSUSM Community Engagement Grant
Reference:

Lewis, P., Klineberg, E., Towns, S., Moore, K., & Steinbeck, K. (2016). The Effects of Introducing Peer Support to Young People with a Chronic Illness. *Journal of Child & Family Studies*, 25(8), 2541–2553. <https://doi.org/10.1007/s10826-016-0427-4>.

ISSUES IN CHILDHOOD

Exploring Family Social Capital and Use of Pediatric Primary Healthcare Services

Kristi K. Westphal, PhD, RN, CPNP-PC

NRSA T32 Postdoctoral Fellow

Center for Child Health and Policy, Department of Pediatrics

Case Western Reserve University School of Medicine

Cleveland, OH

Eileen Fry-Bowers, PhD, JD, RN, CPNP

Hahn School of Nursing and Health

Science, University of San Diego

San Diego, CA

Jane M. Georges, PhD, RN

Hahn School of Nursing and Health

Science, University of San Diego

San Diego, CA

Mary A. Barger, PhD, MPH, RN, CNM, FACNM

Hahn School of Nursing and Health Science

University of San Diego

San Diego, CA

Purposes/Aims: This study examines the relationship between family social capital (FSC) and utilization of pediatric primary healthcare services (UPPHS) within a sample of cases of healthy children aged 0-5 years old from the California subset of the National Survey of Children's Health (NSCH) 2016. Specific aims of this research were to describe demographic characteristics, FSC, and UPPHS within the sample; analyze the associations between the variables; and examine the impact of FSC upon pediatric primary care utilization while controlling for demographic characteristics that were statistically significant.

Background: Merely possessing health insurance does not ensure that families will access or use the primary health care services that are essential to support optimum child growth and development. "Social capital" represents the constellation of resources made available to individuals through participation and membership within social networks. FSC involves family structural composition, family function domains, and the benefits that children glean from membership and participation within a family network. Little is known about the relationship between FSC and UPPHS, however the concept of FSC suggests that family structure and function hold the capacity to support positive health development trajectories for all children.

Methods: Avont and Walker methodology was used to analyze the concept of social capital in nursing. Eight empirical referents were identified, grouped into a behavioral or cognitive family domain, and matched with indicators from the 2016 NSCH. UPPHS was measured as no visits, one visit, or two or more visits with a primary care physician or nurse over the past year. Demographic characteristics were informed by a review of the literature and Anderson's Behavioral Model of Health Care Utilization. Investigators conducted a secondary analysis of data selected from the California subset of data from the 2016 NSCH to examine the relationships between FSH, UPPHS, and the selected sociodemographic characteristics (N=257). Descriptive statistics and bivariate associations were calculated and assessed for the assumptions to conduct ordinal regression.

Results: Bivariate associations between sociodemographic characteristics and UPPHS, FSC, and FSC with UPPHS. Statistically significant associations existed between preventative health care utilization and child age (Chi-square = 61.9, $p < 0.005$, Cramer's $V = .364$) and child race/ethnicity (Fisher's exact probability = 15.8, $p = 0.024$, Cramer's $V = 0.0053$). No correlations were identified between the family social capital variables and utilization of pediatric primary healthcare services, therefore ordinal regression analysis was not conducted.

Implications for Translation to Practice/Further Research: The results of this study are inconclusive due to a lack of statistical significance, however this does not negate the importance of social capital in health care research. Limitations include the secondary analysis design, use of survey data, and the lack of valid metrics to measure family social capital. Further research on social capital is needed to achieve a unified definition, valid measures for social capital, clarity on the relationship between FSC and healthcare decision making, and the longitudinal impact of social capital upon child health development.

ISSUES IN CHILDHOOD

The CANDLE Collaborative: A Novel Approach for Growing Improvement Capacity

*Jennifer Baird, PhD, MPH, MSW, RN, CPN
Director, Institute for Nursing and Interprofessional Research
Children's Hospital Los Angeles
Los Angeles, CA*

*Kevin Blaine, MAEd
Sr. Research Associate, Institute for Nursing and Interprofessional Research
Children's Hospital Los Angeles
Los Angeles, CA*

Background: Hospital discharge is a complex period of transition that can create vulnerabilities for children and their families, particularly those with special healthcare needs. A set of pediatric-specific discharge standards have created a framework for safe, high-quality discharge care planning, but widespread adoption of the standards requires engagement of clinicians and leaders who can drive change within healthcare organizations. Nurses are ideally positioned to lead this change but often lack the experience necessary to facilitate rigorous improvement initiatives.

Purpose: The CANDLE Collaborative was created to spur nurse leaders to promote and foster evidence-based, family-centered, and discharge-focused quality improvement efforts based on the newly-created standards in children's hospitals across California.

Methods: Using participatory action research and deeper learning as frameworks, an eight-member hospital-based learning collaborative was formed in Spring 2018. Local hospital teams are led by a nurse investigator and consist of a varied interprofessional team of collaborators, which include physicians, pharmacists, respiratory therapists, social workers, and hospital administrators. Participatory methods were used to narrow the scope of the Collaborative's work to three standards of focus. Each team has designed an initial improvement project that builds on existing local efforts and that address one or more of the standards of focus. After one seven-month cycle of change, members will implement a second improvement project adapted from the previous work of the other members. The Core Team of the Collaborative supports project implementation at each site via: 1) specialized and structured learning opportunities, 2) hands-on guidance and support in developing and adapting any resources needed to successfully implement local interventions, and 3) continuous operational, managerial, and data analytic support to aid Collaborative members in baseline, process, and outcome data collection and statistical analysis.

Outcomes: The collaborative has two major goals: improvement in patient and family discharge-related outcomes and development of nurse leaders who can effectively facilitate change within their organizations. Patient and family outcomes will be measured in part by caregiver and provider readiness-for-discharge scores and subsequent hospital resource utilization, and leadership development outcomes will be measured through leadership activation and application of deeper learning principles throughout member hospitals over the duration of the Collaborative.

Implications: This California-based nurse-led discharge learning collaborative offers an innovative approach to building capacity for improvement work within healthcare organizations, both in the creation of formal tools and clinical protocols necessary for conducting high-quality discharge care activities and the promotion of a new path for fostering nurse activation and engagement in systems-level policy change. A collaborative of this nature has the potential to aid nurses in becoming strong leaders in their local hospitals and to further improve interdisciplinary collaboration, discharge communication, and family-centered care, positioning nurse leaders as key champions for expanding the influence, spread, and adoption of new pediatric discharge standards.

Funding: Lucile Packard Foundation for Children's Health 2017-00217

ISSUES IN CHILDHOOD

Examining Parental Self-Efficacy in the Context of Pediatric Palliative Care

Eileen K. Fry-Bowers, PhD, JD, RN, CPNP

Associate Professor

University of San Diego, Hahn School of Nursing and Health Science

Betty and Bob Beyster Institute for Nursing Research, Advanced Practice, and Simulation
San Diego, CA

Purpose: This study explored the use of the *Palliative Care Parental Self-Efficacy Measure (PCPEM)* with English-speaking parents of children with complex medical conditions.

Background: Pediatric palliative care (PPC) can prevent or relieve the physical and emotional distress produced by a complex medical condition (CMC) or its treatment, help patients with such conditions and their families live as normally as possible, and provide them with accurate information and support in decision making. In fact, PPC improves symptom management and quality of life for children with complex or life-limiting conditions and their families.

Higher levels of parental self-efficacy (PSE) have been associated with less caregiver strain and better parental management of pain in seriously ill children and adolescents nearing end of life. However, no validated tools exist to measure PSE within the context of PPC, and as a result, no studies to date have examined the relationships between PSE and PPC. The measurement of PSE in this context, especially among underserved populations, can inform the development of appropriate supportive services for affected children and families.

Method: A cross-sectional design using survey methods and convenience sampling was employed. Data was collected at a regional children's hospital cancer institute. Participants were English-speaking ($n= 50$) parents/primary caregivers of children with CMC, age 1 to 21 years, receiving care for cancer or cancer-related condition. Child and parent/primary caregiver sociodemographic characteristics were collected, and PSE was measured using an English language version of the *PCPEM* (scale 1-10, 10 being extremely certain).

Results: Fifty parents/caregivers were surveyed (34% white, 48% Latino, 14% Asian, 2% other). The majority of respondents were mothers (84%); and married (70%). Most children were covered by private health insurance (52%); 40% reported coverage via Medi-Cal, California Children's Services (CCS), or a combination thereof. Respondents reported being most certain in their ability to *help your child take his or her medication correctly* (mean = 9.38, SD 1.027); *accept other new health professionals into your child's health care team* (mean = 9.14, SD 1.04); *advocate for your child's needs* (mean = 9.14, SD 1.53); and *talk openly about their child's care with your child's health care team* (mean = 9.01, SD 1.40). Respondents were least certain in their ability to *do something that helps you feel calm or relaxed* (mean = 6.74, SD 2.46); *change the goals of your child's care from curing the illness or disease to providing comfort care if necessary* (mean = 6.75, SD 2.58); *seek information about financial concerns* (mean = 6.75, SD 2.65); *talk to a counselor about how you feel* (mean = 6.86, SD 2.77) and *find resources to support your child's school or community* (mean = 6.9, SD 2.61).

Implications: Preliminary results demonstrate that parents may need more support managing their own emotional and specific information needs. Continued testing and analysis of this tool will facilitate further investigation of PSE within the context of PPC and direct development of interventions to improve quality of life for this growing population and reduce health disparities.

Funding: The Sence Foundation, Visalia, CA

ISSUES IN CHILDHOOD

Implementing Practice-Based Reminder/Recall to Improve Childhood Immunization

*Kristy Meyer, BSN
Doctor of Nursing Practice Student
Idaho State University
Pocatello, ID*

*Kathleen Baron, DNP
Clinical Assistant Professor
College of Nursing
Idaho State University
Pocatello, ID*

*Rebecca Hoover, MBA, PharmD
Clinical Assistant Professor
College of Pharmacy
Idaho State University
Pocatello, ID*

Background/Rationale: A long history of diligent vaccination has significantly reduced the disability and death associated with vaccine-preventable diseases. Although coverage for early childhood vaccines in the U.S. remains relatively high overall, gaps exist. The percentage of two-year-old children who are up to date on recommended immunizations remains below target levels for several vaccines. This is significant because missed childhood vaccines can contribute to increased morbidity and mortality, reduced preventative care opportunities, and increased health care costs. Given the benefits of vaccination, it is important that nurses continue to implement evidence-based strategies to improve vaccination coverage. A comprehensive review of the literature revealed that using state immunization information systems to send mailed patient reminder/recall notices is an effective strategy to increase childhood immunization rates. Although evidence supports the use of mailed patient reminders, the number of practices utilizing reminder/recall systems remains low.

Purpose/Aims: The purpose of this Doctor of Nursing Practice project is to implement a reminder/recall system that utilizes a statewide immunization information system, at a community health center, to improve early childhood immunization coverage. Primary aims are to increase the number of children two years of age and younger who receive recommended childhood immunizations and to evaluate the process of implementing a practice-based reminder/recall system to identify project successes and challenges.

Methods: The project will take place at a community health center located in Idaho from October, 2018 to January, 2019. The primary intervention will involve using Idaho's Immunization Reminder Information System to send a reminder/recall postcard. Postcards will be mailed to the parents of children, two-years old and under, who are due for one or more of the ten recommended childhood immunizations. The Iowa Model will be used to guide project implementation, the Health Belief Model will be used to develop the content on the reminder postcard, and the Quality Implementation Tool will provide structure for evaluating the effectiveness of implementation.

Outcomes: Data analysis will include assessment of both process and outcome measures. Process measures will involve operationalizing the concepts of fidelity, dose, reach, quality of implementation, project differentiation, and adaptations made. Qualitative data from field notes will be collected to document and describe the implementation process. Primary outcome measures will include receipt of a vaccine and the percentage of children who are up-to-date for each of the recommended vaccines. Data will be collected from immunization information system assessment reports and chart reviews. Descriptive statistics will be used to report results.

Conclusion: Nursing continues to play a pivotal role in improving the delivery of essential care, such as immunizations. Increasing immunization coverage can improve health outcomes among children, families, and communities. Findings from this project will provide valuable information on implementing a practice-based reminder/recall system using a statewide immunization information system. Reporting barriers to implementation, as well as successes and strategies for sustainability, could help nurses and other healthcare providers to successfully implement efficient patient reminder systems to improve immunization practices in primary care.

ISSUES IN CHILDHOOD

Missed Shots: Increasing Flu Vaccine Rates in College Health

*Noelle Simms, BSN, RN
Doctorate of Nursing Practice Student
Hahn School of Nursing*

*Joseph Burkard, DNSc, CRNA
Associate Professor of Nursing
Hahn School of Nursing*

*Kimberly Woodruff, MD, MPH
Supervising Physician
Student Health Center*

*University of San Diego
San Diego, CA*

Purpose: The primary purpose of this evidence-based practice project is to increase influenza vaccination documentation in the student health setting utilizing a standardized clinical reminder. The new template will ensure that all patients seen in the Student Health Center (SHC) are offered the flu vaccine. The template will also prompt documentation of refusal reason. This will provide an educational opportunity during the visit, and ultimately the potential to increase flu vaccination rates among college students.

Background: Influenza is a highly contagious and potentially life threatening disease regardless of age or current health status. Influenza outbreaks in college campuses are common due to the population and close living quarters. Despite the high rates of outbreaks, vaccination rates remain between 8-39% in college-age students according to the National Foundation for Infectious Diseases in 2017. Although over 70% of students stated that getting the flu vaccine is important, less than half received the vaccination. The majority of students that did not receive the vaccine believed that they are too healthy for the flu vaccine. Students attributed cost and access as likely reasons for low vaccine rates, while listing healthcare professionals as having one of the most influential roles in their decision. In 2018 the American College Health Association (ACHA) compiled data from various universities and compared them to clinical benchmarks for screening and prevention. One of the benchmark data points analyzed was documentation of influenza vaccination, including documented reason for refusal. The University of San Diego (USD) SHC had a mean compliance rate of 36%, while the national average was 40%.

Project Process: This project is ongoing at the USD SHC. A new template was created based off the clinical benchmark questions established by the ACHA. It has been embedded into the medical assistants template that is addressed while the patient is being roomed. The provider will review the flu questionnaire when reviewing vital signs. If the patient would like the vaccine the provider will be triggered to order it. If the patient declines the vaccine, the provider will educate based off the documented refusal reason. If the patient changes their mind, the provider will document the change, and order the vaccine. A weekly-randomized chart review will be done to ensure compliance. Questions or concerns will be addressed via email at any time, or in person as needed.

Outcomes: To be determined. The goal is to increase vaccination documentation rates to 70% during the fall semester.

Conclusions: According to the Centers for Disease Control the most effective way to prevent influenza is the annual flu vaccine. Evidence has shown that college-age student vaccine rates are low due to cost, access, and lack of knowledge. Although the majority believes it is important to receive the flu vaccine, the numbers do not match. We plan to close this gap by addressing flu vaccination status during every clinic visit at the SHC, and offering a free flu shot. With this, we intend to increase flu vaccine rates by having the healthcare provider address any stated misconceptions.

ISSUES IN CHILDHOOD

Parental Decision Making When Considering Immunizations for Their Children

Marla J. Seacrist, RN, PhD, Professor

Joshua Merriam, RN, BSN, Master's Student

Paige Opinski, RN, BSN, Master's Student

Tyler Riddick, RN, Master's Student

Jeffery Tabalbag, RN, BSN, Master's Student

Jennifer Mockus, RN, BSN, Master's Student

Mechelle Perea-Ryan, PhD(c), FNP-BC, Associate Professor

Lizette Ruiz, RN, BA, Master's Student

School of Nursing

California State University, Stanislaus

Turlock, CA

Purpose: The purpose of this study was to explore the process parent's use when making vaccination decisions for their children, including the elements that influence their decision.

Background: Vaccinations are widely accepted by healthcare professionals as trusted tools for managing immunization preventable diseases. However, not all parents trust the opinions of their healthcare providers and/or have doubt in the evidence that supports the widespread use of vaccines. According to the Centers for Disease Control and Prevention, the rate of immunization preventable diseases is on the rise, due to the rising rates of vaccine hesitancy and refusal. This increase results in a major public health concern.

Methodology: This study used a descriptive qualitative design. The sample consisted of parents recruited online from local and national public parenting blogs, email list serves, and webpages. Recruitment occurred at webpages that included both anti-vaccine and/or pro-vaccine viewpoints. Data was collected using SurveyMonkey with open ended questions eliciting narrative responses about their vaccine decision making. Data was coded and analyzed using the grounded theory approach, in order to reveal their decision making process.

Results: A total of 248 parents participated in the study. Parents whose child/children received at least one vaccine represented 92% of the sample, where 8% stated their child/children received no vaccines. The overall theme across all questions was Trust/Mistrust. This was evident in all discussions about decision making, as well as their interactions with healthcare providers and the influence of their friends and family. The most commonly cited resources parents accessed for decision making included websites, books, and their healthcare provider. Specific themes on the resources parents used to make their decisions included trust/mistrust, ease of use, and credible evidence. Factors that influenced their decision to vaccinate or not centered on their perceptions of the risk of vaccine related injury, benefits of disease prevention, personal experiences, trust/mistrust, and credible evidence. The theme of trust/mistrust was the central theme again in the parent interactions with specific vaccine information from their healthcare provider, where some parents felt there was little to no information provided and others felt the information they received was adequate. Parents expressed that the information they received was either negligent, biased, or sufficient.

Implications: Understanding the process parents use when making vaccination decisions is important for individual healthcare providers and public health policy makers. Parents are accessing websites on their own, which may or may contain credible information. Therefore, interventions should target correcting misinformation parents might receive through non-credible sources. Parents are asking for more information and discussion about these difficult decisions with their healthcare providers. Building or restoring trust should be the focus for reducing vaccine hesitancy or refusal, both from an individual healthcare provider perspective, as well as public, private, and government institutions.

Abstracts of Poster Presentations

**LATINO/A/X VOICES:
STRATEGIES TO CAPTURE DIVERSE
PERSPECTIVES ON HEALTH**

LATINO/A/X VOICES: STRATEGIES TO CAPTURE DIVERSE PERSPECTIVES ON HEALTH

Overview: Latino/A/X Voices: Strategies to Capture Diverse Perspectives on Health

Adrienne Martinez, PhD(c), MSN, RN, PHN
PhD Candidate
School of Nursing
University of California, Los Angeles
Los Angeles, CA

Purpose: The aim is to describe methodological techniques, philosophical models and community-engagement strategies that have been successfully adapted by health researchers in recent explorations among Latinos/as/x in the United States (US).

Background: According to the Pew Research Center (2015) the Latino/a/x population is the largest ethnic or racial minority in the US, expected to more than double by 2060. The 2016 National Institute of Minority Health Disparities Report highlighted these ~57.5 million individuals as reflecting a variety of cultural backgrounds, traditions, and beliefs about health and health-seeking behaviors. Departure from the traditionally monolithic view of Latinos/as/x in the US may offer insight into creating targeted or streamlined interventions to ameliorate the projected increased need associated with chronic illness and health utilization disparities among this group. Critical recognition of Latino/a/x positioning, visibility, and voice is rooted in scholarly approaches that incorporate culturally-sensitive methods, models and engagement strategies among academic researchers and clinicians working with US Latinos/as/x.

Method: A variety of approaches positioning Latino/a/x participants as experts on their own health-seeking experiences are presented. Models, methods and techniques for effectively engaging in and presenting research, and providing clinical care to Latinos/as/x will be presented.

Results: A university-community partnership project in three Federally Qualified Health Centers (FQHC) in central California will address shared medical appointments (SMA) as an innovative and collaborative approach among Latinos/as/x with type 2 diabetes. A regression analysis demonstrated significant reductions in A1C at six months in two FQHC sites (-1.06% and -1.12%) compared to the control group indicating this collaborative, empowerment model is a viable approach among Latinos/as/x living with type 2 diabetes. Second, results from two reviews of the literature highlight difficulties encountered during preliminary data-gathering prior to intervention design among Latinos/as/x. An integrative literature review on end-of-life decision-making among older Mexican Americans, framed by the Ethno-Cultural Gerontological Nursing Model, retrieved over 220 publications, however, only 20% centered on the participants as experts and 9% focused on Mexican Americans as a Latino subgroup. An innovative adaptation of the Citizen Science Model was used to refine the traditional literature review process for recognition of Latino/a/x sub-populations within larger studies of Latinos/as/x as a monolithic group or within cross-cultural explorations. The adapted model allowed for a 30% increase in the final article pool. Finally, members of the National Association of Hispanic Nurses, Los Angeles Chapter, will present findings from *The Healthy Pueblo Challenge*, a residential community-based approach to lifestyle change and improved health among low-income Latinos in Los Angeles. This approach resulted in increased self-rated *general* (47% vs. 93%) and *mental health* (64.2% vs. 73.3%), improvements in sleep, daily fruit and vegetable consumption and residents' reported feelings of safety and community cohesion.

Implications: In the spirit of this year's WIN focus, "Career, Connection, Community", this symposium seeks to collectively address connection-forming and community-building within the professional field of nursing as a way to support those who study Latino/a/x health disparities in academic, clinical or community-based environments.

LATINO/A/X VOICES: STRATEGIES TO CAPTURE DIVERSE PERSPECTIVES ON HEALTH

Mexican American Voices: A Cautionary Tale from an Integrative Literature Review

Kimberly Shea, PhD, RN, CHPN, Clinical Associate Professor, College of Nursing

Janice D. Crist, Associate Professor, College of Nursing

Evangeline M. Ortiz-Dowling, Clinical Assistant Professor, College of Nursing

Linda R. Phillips, Senior Director of Research and Education, College of Medicine

University of Arizona

Tucson, AZ

Purpose: The purpose of this presentation is to proffer the evidence available in extant scientific literature about Latino groups based on an integrative literature review on end-of-life decision making among older Mexican Americans (MA) framed by the Ethno-Cultural Gerontological Nursing Model (ECGNM).

Rationale: Designing interventions and conducting research with individuals in unique ethno-cultural groups such as Latinos requires advanced knowledge about cultural and linguistic equivalence; history and politics; and diplomatic interpersonal skills. Most investigators pay careful attention to these topics, but take for granted the strength and appropriateness of the scientific evidence available to guide the research. The ECGNM was designed to identify factors that influence health care decisions and outcomes among older adults in unique ethno-cultural groups. Historical period (external factors of the group, e.g., policy and stereotypes); Group-based (group membership factors, e.g., cultural values, gendered experience, perceptions of discrimination); and Micro-level (individual personal characteristics such as immigration/accluturation experiences, nativity and resources) are all examined as influential factors in making decisions. This model was the basis for the coding categories applied in our systematic evaluation process.

An assumption of the ECGNM is that ethno-cultural groups have unique decision-making characteristics. Applying this assumption to Latinos requires researchers to acknowledge that Latinos are represented by 10 subgroups that are unique in culture, settlement patterns, immigration experiences, history, language variations, genetics and morbidity, and health care decision-making. Members of these groups may have similarities, but similarities cannot be assumed.

Method: Using search terms including *hospice care*, *end-of-life care*, and *terminal care*, among *Hispanics*, *Latinos*, or *Mexican Americans*, we assessed 345 unduplicated papers. Of these 22 (representing only 14 unique samples) were included in our synthesis. The most common reasons for exclusion were researchers did not specify or differentiate among Latino groups, Mexican Americans were not equitably represented, or other groups (Latino and non-Latino) were studied (N = 96). Eighty excluded articles mentioned some aspect of end-of-life care and ethnicity/race in the title, but virtually none involved comparisons among Latino subgroups.

Results: Our literature review revealed the scant amount of literature available about MA as one Latino sub-group. It also revealed that most scientific literature on end-of-life care ignores subgroup differences among Latino groups. The review also revealed how little we know about factors such as policy, stereotypes, and gender. Coding revealed important literature gaps. For example, in 50% of the articles, Historical period influences were not part of the findings, although institutional policy was frequently part of discussions and most discussions warned against stereotyping. Attention was paid to some Group-based influences such as Spiritual/religious dimensions, Cultural values, and Social/kinship/caregiving structure, but not to relationships of these to factors such as nativity, acculturation and age were little studied. Group-based influences such as gendered experience and perceptions of discrimination were largely ignored. Knowledge but not socio-economic status or immigration/ acculturation experiences were considered as Micro-level influences.

Implications: Our experience stands as a cautionary tale challenging researchers to not assume the scientific evidence on which their research is based is either strong or appropriate.

LATINO/A/X VOICES: STRATEGIES TO CAPTURE DIVERSE PERSPECTIVES ON HEALTH

Adapted Citizen Science Model to Explore Latino/A/X Older Adult Emotional Wellbeing

Adrienne Martinez, MSN, RN, PHN, PhD Candidate, School of Nursing, University of California, Los Angeles, CA, ACMartinezRN@yahoo.com; Lizett M. Leandro, BSN, RN, Master of Science in Nursing Student, School of Nursing, California State University, Long Beach, CA, Lizett.mag@gmail.com; Jacqueline Hernandez, BA, Master of Public Health Student, Health Sciences Department, California State University, Northridge, CA, Jackiehdez313@gmail.com; Jovita Murillo, MA, Doctoral Student, School of Community and Global Health, Claremont Graduate University, Claremont, CA; Jamie Tijerina, BS, MBA, SCYM (ASCP), Scientific Researcher, Biology and Biological Engineering Department, California Institute of Technology, Pasadena, CA, jamie@caltech.edu; Joseph Carroll, BS, Senior Technical Project Manager, Operations Department, The Solis Group, Pasadena, CA; Eric Fein, MD, MPP, Pediatrician, Harbor-UCLA Medical Center, Torrance, CA, efein@ucla.edu

Purposes: The purpose of this project was to utilize an adapted Citizen Science Model leveraging Latino/a/x community experts from a variety of healthcare education backgrounds to explore definitions or measures of emotional wellbeing used in literature focused on Latino older adults.

Background: According to their review of unequal treatment associated with racial and ethnic disparities in health care, the Institute of Medicine (2003) identified Latinos living in the United States (US) as being both more likely to encounter mental and physical health disparities than non-Latino US whites, and disproportionately lacking access to care for these co-occurring issues. Emotional wellness (or wellbeing) is a term used by diverse groups, including the National Institutes of Health, that has the potential to speak to the complicated intersection between physical, mental and emotional health described in some health literature surrounding US Latinos' health-seeking experiences. In response to a need for a culturally-sensitive definition of emotional wellbeing for use among Latino older adults, this review of the literature was undertaken using an adapted Citizen Science Model. This adapted model leverages the expertise of Latino/a/x students from a variety of healthcare education backgrounds as key informants and analyzers of data.

Process: Volunteer participants from a Latino, student-run research collective serving as citizen scientists participated in three virtual group training sessions. These trainings entailed practical instruction on the completion of a literature search, table of evidence, data analysis and write-up of findings. Following these trainings, additional group meetings were held until the first draft of an academic paper was collectively created.

Outcomes Achieved: Use of the adapted Citizen Science Model resulted in increased recognition of Latino/a/x sub-populations within larger studies, either of Latinos/as/x as a monolithic group or within cross-cultural explorations. This input expanded inclusion criteria by using Latino/a/x community-identified proxy terms in the initial literature search, allowing for a 30% increase in the final article pool. During the initial implementation of this project, additional benefits of this adapted model organically emerged, including: 1) exposing Latino/a/x students to a career in academic research; 2) preventing mentor role-strain among Latino/a/x researchers currently in academic roles, or in various stages of graduate training; 3) promoting diversification of the healthcare fields; and 4) reducing 'gatekeeping' that might discourage these students from entering healthcare training.

Conclusions: Citizen scientists from this research collective were in the unique position of being able to offer culturally-contextual expertise and input on the initial search parameters and other aspects of the literature review. The successful use of the adapted Citizen Science Model represents possibilities of refining search terms and expanding inclusion criteria in other explorations of experiences and health-seeking practices of US Latinos/as/x. The adapted model also represents an innovative approach to diversifying the healthcare field via increasing numbers of Latino/a/x academic scholars and clinical providers.

LATINO/A/X VOICES: STRATEGIES TO CAPTURE DIVERSE PERSPECTIVES ON HEALTH

The Healthy Pueblo Challenge: Residential Community Approach for Low-Income Latinos

Juana Ferrerosa, PhD, PHN, RN

*Community Partner, National Association of Hispanic Nurses, Los Angeles Chapter
Mervyn-M. Dymally School of Nursing
Charles R. Drew University of Medicine and Science
Los Angeles, CA*

juanaferrerosa@cdrewu.edu

Margaret Avila, PhD, PHN, APRN

*Term Dean- Entry Level Master's and Family Nurse
Practitioner Program
School of Nursing
Charles R. Drew University of Medicine and Science
Los Angeles, CA*

Denise De La Rosa Salazar

*Community Representative
Healthy Pueblo Wellness Initiative
Pueblo Del Sol
Los Angeles, CA*

Purposes: The purposes of *The Healthy Pueblo Challenge* were to increase the adoption and maintenance of healthy behaviors and improve health knowledge among low-income Latinos via a residential community-based approach.

Background: The Los Angeles (LA) Chapter of the National Association of Hispanic Nurses (NAHN) recognizes that fostering healthy behaviors in predominantly-Latino affordable housing communities requires an approach that connects the physical environment to the social fabric of the community. A grassroots effort between LA NAHN, the LA Christian Health Clinic, and an affordable urban housing development company, resulted in the creation of *The Healthy Pueblo Challenge*. This annual summer project combined on-site community building through shared multi-family meals, family-centered competitive fitness activities and group health education.

Approach: On-site community programming was provided for predominantly low-income Latino residents of the *Pueblo del Sol* residential community. Fitness activities and health education programs included: child and adult oral health workshops, water aerobics classes, team obstacle courses and community potlucks. Pre- and post-program health assessments were performed; participants maintained personal health journals. Participation varied annually (n~45) between 2013-2017. Participants received \$20 gift cards. Each summer, the three families with the greatest number of participation hours were honored at a community event.

Outcome Achieved: Following program completion, increases in participant self-rated *general health* (47% vs. 93%) and *mental health* (64.2% vs. 73.3%) were seen. Additional anecdotal resident reports indicated improvement in sleep and increases in daily fruit and vegetable consumption; residents also reported more satisfaction with their residential community, and greater feelings of safety and community cohesion than they felt in their larger Boyle Heights community. Low attrition rates were notable, with an average program completion rate of ~89%.

Conclusion: Improvements in self-rated health and adoption of healthy behaviors across a number of realms, as well as high annual levels of program completion indicate the residential community engagement approach was seen as acceptable to low-income Latino participants at Pueblo del Sol. This approach represents a promising and viable route to the adoption and sustainability of healthy behaviors among low-income Latinos in Los Angeles.

Abstracts of Poster Presentations

MENTAL HEALTH

MENTAL HEALTH

Genes, Inflammation, and Resilience to Stress

Kosuke Niitsu, PhD, APN, PMHNP-BC
Postdoctoral Fellow, College of Nursing
University of Colorado Anschutz Medical Campus
Aurora, CO
Kosuke.Niitsu@ucdenver.edu

Michael J. Rice, PhD, APN, FAAN
Professor & Endowed Chair: Psychiatric Nursing
University of Colorado Anschutz Medical Campus
College of Nursing
Aurora, CO
Michael.J.Rice@ucdenver.edu

Background: The most recent national survey indicates that graduate students are more than six times more likely to experience depression and anxiety than the US general population. Additionally, 47.9% of the general population in the United States report at least one adverse childhood experience, including abuse, neglect, and household dysfunction. When exposed to stress, the Hypothalamic-Pituitary-Adrenal axis and the Sympathetic Nervous System are activated. Activation of these pathways leads to the release of inflammatory mediators, such as Interleukin 6 (IL-6) and Tumor Necrosis Factor- α (TNF- α), promoting a generalized inflammatory response. Numerous meta-analyses support proportional relationships between increased inflammation and psychopathological disorders, such as post-traumatic stress disorder. Whereas some individuals are more vulnerable to develop psychopathological symptoms, others are less adversely affected by stressful events, who are often described as resilient. Emergent evidence indicates genetic variations, such as the *Serotonin Transporter-Linked Promoter Region (5-HTTLPR)*, and psychosocial variables, such as social support, may influence the levels of inflammation and resilience. Because most researchers investigate the risk factors contributing to psychopathology, little is known about the variables contributing to resilience. Determining the contributions to resilience is critical in designing healthcare strategies facilitating recovery from adverse stress experiences.

Purpose: The purpose of this study is to examine the relationships between genetic polymorphisms contributing to inflammatory markers and resilience.

Methods: This is a cross-sectional, correlational study examining the relationships among stress, biological markers of *5-HTTLPR*, IL-6 & TNF- α , resilience resources, and mental health outcomes. Data will be collected from students/residents/fellows enrolled at a Medical University in the United States. Distant and current stress, resilience resources such as social support, and mental health outcomes will be measured by questionnaires using Qualtrics, a secure cloud-based survey platform. Saliva will be collected using the Saliva Collection Aid by passive drool to analyze for *5-HTTLPR*, IL-6, and TNF- α and frozen at or below -20 °C within 4 hours of sample collection. After collecting data from participants ($N = 70$), saliva samples will be genotyped for *5-HTTLPR* using electrophoresis and analyzed for IL-6 & TNF- α using high sensitivity enzyme-linked immunosorbent assays (ELISA).

Results: This research is currently in-progress.

Implications: While psychometric approaches have value, self-report assessments are highly susceptible to self-report bias. A solution to this challenge is the introduction of standardized and validated biological predictors of resilience. This study helps us examine the usefulness of inflammatory markers in clinical applications. In addition, investigating genetic contribution to resilience may help us develop personalized interventions for individuals exposed to stressful events.

Funding: University of Colorado Psychiatric Nursing Endowment to advance Mental Health

MENTAL HEALTH

Do Not Miss Your Shot: Improving Follow-Up in Patients Receiving Injectable Medication

*Mary O'Hara, RN, BSN
Doctor of Nursing Practice Student
Psychiatric Mental Health
University of San Diego
San Diego, CA*

*Gabriel Rodarte, MD
Diplomat of Psychiatry and Neuroscience
Diplomat of Family Medicine
Neighborhood Health Care
Escondido, CA*

*Semira Semino-Asaro, PhD, RN,
PMHCNS-BC, PMHNP-BC
Associate Professor
University of San Diego
San Diego, CA*

Aim: The aim of this project is to improve adherence to injection schedules for patients receiving long-acting injectable (LAI) medications by reducing the number of days between scheduled injection and injection administration. This evidence-based project will standardize injection visit protocol to include appointment scheduling and reminders.

Background: Telephone and text reminders have shown efficacy in improving patient follow-up and engagement in treatment. The current reminder system at this community-based clinic delivering psychiatric care is triggered once an appointment is made and consists of (1) a text message 3-days prior to visit, (2) a phone call 2-days prior to visit, and (3) a phone call 1-day prior to visit. However, no such reminder system is available for patients walking in for injections of their long-acting medications. Current practice for patients receiving LAI medications is to (1) receive their injection during an appointment with their provider or (2) come to the clinic as a 'walk-in' and receive the injection at that time. In some cases, this lack of a reminder system for walk-in patients leads to injections being administered past their due date. Inconsistent medication adherence has the potential to result in destabilization of patient condition. Hospitalization, missed work, and negative relationship impacts are potential consequences of destabilization.

Methods: A template was created to standardize injection appointments and a protocol for "Flip-Visit" was devised. Per protocol the medical assistant initiated the LAI visit template and notified the provider upon completion. The provider then met with patient briefly and verified medication. The medical assistant administered the injection and accompanied the patient to the lobby to make an appointment for follow-up at the appropriate dosing interval. The patient was added to their provider's schedule and double-booked if necessary to ensure an appointment was created that would prompt the appointment reminder system. The patient then received a reminder 3, 2, and 1 day prior to their next injection due date.

Results: Data collection is ongoing and will reflect number of days between scheduled and administered injections. Results are pending and will be presented.

Clinical Implication/Conclusion: Evidence suggests that consistent use of appointment reminders can improve adherence to medication regimens that prolong stabilization of patients receiving LAI medications. Furthermore, standardizing visit protocol can increase productivity and has the added benefit of addressing inadequate workflow compensation.

MENTAL HEALTH

Mental Health Research Priorities for Sexual and Gender Minority People

Kristen D. Clark, MSN, RN, Nursing PhD Student, Community Health Systems, University of California, San Francisco, CA; Matthew R. Capriotti, PhD, Assistant Professor, Department of Psychology, San Jose State University, San Jose, CA; Juno Obedin-Maliyer, MD, MPH, Assistant Professor, Ob/Gyn Reproductive Science, University of California, San Francisco, CA; Mitchell R. Lunn, MD, MAS, Assistant Professor, Medicine, University of San Francisco, CA; Annesa Flentje, PhD, Assistant Professor, Community Health Systems, University of California, San Francisco, CA

Purpose: The purpose of this study is to identify the mental health research priorities of behavioral health providers, including psychiatric mental health nurse practitioners (PMHNP), who treat sexual and gender minority people in their clinical practice.

Background: Research to date has illuminated the presence of significant disparities in the prevalence of mental health and substance use disorders among sexual and gender minority people such as elevated rates of suicidal ideation, substance abuse, and mood disorders (Institute of Medicine [IOM], 2011; James et al, 2016; Valentine & Shipherd, 2018). Behavioral health providers, are a key stakeholder to address these disparities. Querying behavioral health providers to identify high need areas can help identify where research focus is most needed.

Methods: A survey was distributed electronically to behavioral health providers across the U.S.. This survey listed 62 topic areas for sexual and gender minority mental health research and asked behavioral health providers to rate each item on a Likert scale. Behavioral health providers were also queried in open ended prompts to identify other areas for mental health research. Descriptive and inferential statistical analyses were employed to characterize stakeholder views of priorities and to evaluate differences in prioritization based on stakeholder factors. Kruskal-Wallis tests were used to identify if the highest ranked items differed by professional role of the respondent or population density where behavioral health providers provide care.

Results: One hundred sixty-three behavioral health providers responded from professions including psychiatrists (n=45), psychologists (n=27), social workers (n=20), PMHNPs (n=5), in addition to other behavioral health providers (n=66). Five items were consistently found to be of highest research relevance based on the mean scores; “stressors related to sexual and gender minority status” (mean=5.45; SD=0.79), “suicide” (mean=5.21; SD=1.03), “lifestyle factors that support emotional resilience and wellbeing” (mean=5.31, SD=0.91), “depression” (mean=5.28, SD=0.99), and “intimate relationships” (mean=5.25, SD=0.92) . No significant difference was found when these five items were analyzed based on professional role or population density where services were provided. Open-ended responses indicated a need for research focus on areas relating to relationships, sexual behavior, and intersectionality.

Implications: The five items with the highest mean, “stressors related to sexual and gender minority status”, “suicide”, “lifestyle factors that support emotional resilience and wellbeing”, “depression”, and “intimate relationships”, are represented well within the framework of current research. Additional focus is specifically needed on the health of sexual and gender minority people based on intersectional identities and how mental health and care is impacted by multiple identities. Sexual behaviors and relationships among sexual and gender minority people were also suggested as an area where additional knowledge is needed by behavioral health providers. These results should be used to guide future research priorities among nurse researchers.

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MENTAL HEALTH

Rates of Traumatic Brain Injury: Screening & Charting Practices Are Missing the Mark

*Kendall Wynde, Research Assistant^{1,2}
Megan L. Callahan, PsyD, Neuropsychologist¹
Alisha McBride, Study Coordinator¹
Nadir M. Balba, Graduate Student and Study Coordinator²
Ryan Opel, Statistician¹
Kris B. Weymann, PhD, RN, Nurse Researcher¹
Miranda M. Lim, MD, PhD, Primary Investigator¹*

¹Portland VA Research Department, Portland VA Health Care System, Portland, OR

²Oregon Health & Science University, Portland, OR

Background: Traumatic brain injury (TBI) is a common form of neurologic injury that in some cases is followed by disability and lasting impairment. Despite growing recognition of its prevalence and the potential for debilitating sequelae, screening methods and communication by health care providers about TBI diagnosis leave much to be desired.

Purpose: This analysis aims to highlight the frequency with which TBI cases are unidentified as well as the discrepancies in language providers use to describe TBI in the Electronic Medical Record (EMR). As a primary presence at the bedside, nurses can be instrumental in providing screenings and in implementing a uniform language for describing TBI amongst both colleagues and patients.

Methods: This analysis includes 57 participants (54±13.4 years old, males n=49). Data on TBI status was gathered from three sources for each subject: a structured TBI interview and subsequent neuropsychologist diagnosis; self-report gathered from a health history questionnaire; and the participant's EMR.

Results: The structured TBI interviews found that 93% of participants had a history of TBI. In contrast, 81% of participants self-reported a TBI and only 30% of participants' Electronic Medical Records documented a history of TBI. In other words, just less than 30% of participants' EMRs were accurate concerning TBI history when compared to the structured TBI interview and neuropsychologist's diagnosis. In fact, 37% of the EMRs contained no screening nor mention of TBI whatsoever. What's more, of those participants whose EMRs did not reflect a history of TBI, 78% self-reported a TBI on a health history questionnaire. Thus, had a provider simply asked these participants if they had a history of TBI, three out of four would have replied "yes." This demonstrates that many health care providers are not including even a brief TBI screening in their practice.

In addition to lack of screening and identification of TBI, EMR notes contained inconsistent and often imprecise language describing TBI. For example, many providers used the term "concussion" rather than the more specific and accurate "mild TBI." What's more, nearly a quarter of participants' EMR notes mentioned "head trauma" without clarifying specifics such as alteration of consciousness, loss of consciousness, or amnesia.

Implications: Overall, this data suggests that health care providers are neither adequately screening their patients for TBI nor documenting TBI status using consistent and clear terminology. This is a crucial finding because TBI can lead to many comorbidities, including depression, anxiety, neurodegenerative diseases, and functional impairment. When compounded by repeated injuries, even a mild TBI could lead to the development of these comorbidities. As such, it is crucial that TBI is accurately documented so that the entire narrative of a patient's trajectory is available to the care team. As nurses, we see the implications of TBI without recognizing its hand in the problems our patients face. This calls for greater attention to TBI in history taking and assessment. It also compels increased accuracy and clarity in education for caregivers at all levels.

Funding: This project is funded by Department of Defense PT160162. Miranda Lim's Laboratory gratefully acknowledges support from: VA Biomedical Laboratory Research & Development (BLR&D) Career Development Award (CDA) # IK2 BX002712; VA Rehabilitation Research & Development (RR&D) SPIRE Award; Portland VA Research Foundation; NIH EXITO Institutional Core, #UL1GM118964 to MML.

MENTAL HEALTH

Asian Older Immigrants' Perceptions on Depression, Dementia, and Elder Abuse

Jung-Ah Lee, PhD, RN
Associate Professor
Sue & Bill Gross School of Nursing
University of California, Irvine
Irvine, CA

Hyun Jung Kim, PhD, RN, PMHNP-BC
Assistant Professor
College of Nursing
Seattle University
Seattle, WA

Hannah Nguyen, PhD, MSW
Assistant Professor
Department of Human Services
California State University, Dominguez Hills
Carson, CA

Kathy Hoang Yen Le, BSN, RN
Sue & Bill Gross School of Nursing
University of California, Irvine
Irvine, CA

Dara Sorkin, PhD
Associate Professor
School of Medicine, UCI

Lisa Gibbs, MD
Clinical Professor, Medical Director
Geriatric Medicine, UCI

Background and Purpose: Asian Americans are estimated to be over 21 million people in the US and approximately 12% are reported to be ages 65 and older. However, this diverse and fastest growing population has been often overlooked in the national conversation on aging and related issues. Studies have shown that those who immigrated to the US have experienced difficulties with acculturation, language, financial stability, and social support, which can affect their overall health and well-being. This impact is more significant on older immigrants who are going through the aging process. Among various Asian Americans, Vietnamese American (VA) and Korean American (KA) older adults are identified as a poverty group in Southern California. Therefore, the purpose of this study is to examine VA and KA older immigrants' perception of aging and the challenges related to depression, dementia, and elder abuse.

Methods: One-on-one, semi-structured interviews were conducted with ten VA and ten KA older adults, aged 65 or older living in Southern California. Bilingual researchers in Korean or Vietnamese languages asked 3 broad questions regarding the older immigrants' perceptions on depression, dementia, and elder abuse. Interviews were audio-taped, transcribed in verbatim, and translated into English. Thematic analysis was performed using an on-line qualitative data analysis software.

Results: The sample consisted of 6 males and 14 females with ages ranging from 65 to 80 years. Mean English proficiency reported was 2 (1=cannot speak English, 5= excellent) for both groups. Four themes identified were (a) knowledge on geriatric depression, (b) lack of social support, (c) concerns about memory problems, and (d) financial status and family relationships. Although participants expressed the importance of educating VA and KA communities about geriatric depression, they were not willing to discuss individual experiences of depression for multiple reasons such as lack of knowledge on depression, inability to identify their own symptoms, and stigma. Many discussed experiencing 'isolation' and 'loneliness' due to lack of social support. Varying degrees of memory problems were reported, which went beyond forgetfulness in some participants. VA and KA older adults described their financial status affected how they related to and interacted with their families (i.e., adult children). In general, both VA and KA participants expressed that it was inappropriate to share their actual or perceived health concerns with others, especially adult children due to the fear of being a burden.

Conclusion/Implications: VA and KA older immigrants dealing with multiple risk factors are susceptible to the challenges of aging related to depression, dementia, and elder abuse. This study indicates that future outreach efforts need to include culturally appropriate education on depression and dementia, strategies to de-stigmatize these conditions in VA and KA communities, interventions to strengthen social support, and resources to assist finance management and family interactions. The study also emphasizes that it is important for healthcare providers to assess VA and KA older immigrants thoroughly as they may be reluctant to disclose information related to mental health concerns and personal matters such as finance and family relationships that might be related to elder abuse.

Funding: The project was supported by the U.S. Department of Health and Human Services – Health Resources and Services Administration grant for Geriatric Workforce Enhancement Program, through Grant 1 U1QHP28724-02-01.

Abstracts of Poster Presentations

NEONATAL HEALTH

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Developing a Lactation Risk Scoring Tool for Infants in a Neonatal Intensive Care Unit

*Lisbeth Gabrielski, MS, RN, IBCLC
NICU and Lactation Clinical Manager
Children's Hospital Colorado
Aurora, CO*

*Mary Ann D'Ambrosio, BSN, RNC, IBCLC
Lactation Consultant
Children's Hospital Colorado*

*Diane Melara, BSN, RN
Senior Professional Research Assistant
Children's Hospital Colorado*

Purpose: The aim is to develop a Lactation Risk scoring tool which identifies NICU infants who are at higher risk of cessation of the use of human milk during hospitalization.

Background: NICU mothers must rely on expressing their breast milk to promote and ensure an optimal supply of human milk for their infant. Many mothers provide for their infant's feedings during their entire hospitalization while other mothers have a less than optimal breast milk production necessitating the need for donor human milk or formula supplementation. Maternal health factors which negatively impact breast milk production include but are not limited to pregnancy induced hypertension, obesity, infection, and intrapartum hemorrhage. Maternal demographic factors such as age, race, and ethnicity effect the duration of breast feeding. Factors such as gestational age, birth weight, and length of stay are among a number of infant factors which effect the duration of breast milk feeds. There is limited knowledge about which infant and maternal factors may contribute more to the cessation of breast milk feeds than other factors.

Methods: Maternal and infant factors and combinations of factors placing NICU mothers at risk of reaching and maintaining an optimal breast milk supply throughout the infant's hospitalization were identified. A neonatal database was created of infants <7 days of age admitted into a level IV NICU, who initiated breast milk feedings and continued at discharge as compared to those patients that discontinued use of breast milk at discharge. The database consists of 793 mother-infant dyads. Six hundred randomly selected dyads will be a training set to build a model using logistic regression. One hundred fifty-three dyads will be used as a test set for assessing the predictability of the best model.

Results: Statistical analysis is in progress. Results will be available Spring 2019.

Implications: The lactation risk scoring tool will assist the health care team to identify a mother-infant dyad at risk of cessation of mother's own milk during the infant's hospitalization enabling the team to develop a plan of care for mothers of infants in a neonatal care unit to provide optimal lactation management and outcomes.

NEONATAL HEALTH

Predictors of Infant Emergency Department Utilization

*Mechelle Perea-Ryan, PhD(c), FNP-BC, CPN, PHN
Associate Professor
School of Nursing
CSU, Stanislaus
Turlock, CA
mperearyan@csustan.edu*

Purpose/Aims: The purpose of this retrospective study was to identify factors that predict which infants will visit the Emergency Department (ED) compared to those who return as direct admits within the first year of life.

Rationale/Conceptual Basis/Background: Over the last thirty years, use of the ED for non-urgent care has grown to approximately 30% of all visits, with the infant population being a large majority. Infants in the ED experience increased risk of exposure to other illnesses that can become catastrophic for them due to their decreased immune systems and respiratory and vascular reserve. In addition, infants who receive their routine health care in the ED are much less likely to receive preventative care, health promotion information and miss immunizations. Andersen's Model of Health Care Utilization identified three important factors associated with healthcare utilization: predisposing factors, enabling factors, and need.

Methods: Data from California Office of Statewide Health Planning and Development for infants born between 2008 and 2012 linked by birth ID were used for this study. Approval was obtained from two ethic review boards prior to obtaining and analyzing the data. Andersen's Model of Health Care Utilization was used to categorize predictor variables. A multiple regression analysis was completed for ED release, ED admit, and direct admit using a stepwise approach to determine the most significant covariates in each of Andersen's factors. Only the covariates that were statistically significant were incorporated into the full regression model. The final full model was used to estimate odds ratios and 95% confidence intervals. A *p* value of less than .05 was used as the criterion for statistical significance.

Results: Approximately 75% of the infants with a hospital visit after birth had an ED visit. Being female, Black or Hispanic, having Medicaid or no insurance, and a mother who was less educated increased the odds of ED utilization. ED need factors were inversely related to infants with a direct admit. Infants born by C-section, premature, having a decreased Apgar score at five minutes or birth weight, complications during labor and delivery or at birth, or a maternal illness during pregnancy were less apt to have an ED visit, but more apt to have a direct admit.

Implications for Translation/Further Research: The study results support findings from previous studies reporting ED utilization to be the primary type of hospital visit during the first year of life. This examination of ED visit predictors assists post-partum and ED nurses during discharge and nurse practitioners providing primary care to understand the populations needing the most support and education. Examining infants with direct admits aids in obtaining the knowledge needed to encourage use of primary care providers when infants are ill. Future research would qualitatively examine the decision making process of parents who took their infant to the ED versus those who did not.

NEONATAL HEALTH

Detecting Neonatal Pain through the Connection of Neonate-Nurse Communication

*Katherine Dudding, BSN, RNC-NIC
Doctoral Candidate
College of Nursing*

*Jane M. Carrington, PhD, RN, FAAN
Associate Professor
College of Nursing*

*Clayton T. Morrison, PhD
Associate Professor
School of Information*

*University of Arizona
Tucson, AZ*

Purpose: Here we present initial results from a feasibility study that seeks to test an innovative methodology to collect and analyze video recording of neonatal faces and bodies. From these images, we will assess their use in the development of an algorithm that learns to reliably classify video segments associated with neonate pain expression within the Neonatal Intensive Care Unit (NICU).

Background: In the US, 6.1/1,000 neonates die each year, and these deaths can be attributed to our inability to detect pain in the neonate before advanced life-threatening complications. Early detection of pain in the neonate is dependent upon effective neonate-nurse communication. Nurses are often solely reliant on physiological signs of neonatal pain, which at that time point, is associated with poor outcomes. Building on the work of Carrington, we tested a technology solution to increase effective neonate-nurse communication of pain.

Methods: After obtaining IRB approval from the study site and the University of Arizona, recruiting and consenting was done by both parent/guardians and the nurses caring for the neonates. Study participants consisted of 6 neonates from 34-42 weeks gestation who met inclusion criteria for the study. Cameras were set up at the neonate's bedside with a camera facing the ECG monitor and additional cameras mounted to the neonate's bed linked to a computer to observe the neonate for 24 hours by video. When a routine procedure was performed that induced pain in the neonate (e.g., heel sticks), the nurse was asked to press a button on the computer to record that the time point within a segment of recorded video was associated with painful stimuli. Neonate videos have been annotated by domain experts trained in pain scale assessment to score the appearance of pain in the images. The goal is to develop an algorithm that can then predict the pain annotation with as close to 100% accuracy as possible.

Results: Study findings are pending. However, we have learned so far with the feasibility study with the data collection of 6 neonatal participants is 1) neonatal faces are round compared to oblong adult faces; 2) the low lit environment along with poor quality webcams was thought to lead to pixilated images, but it was shortly discovered that the contrast of the image was the problem and not pixilation in the pre-processing of the images; and 3) pain events are occurring more frequently with routine procedures than initially hypothesized within the NICU.

Implications: This feasibility study is the first phase towards the development of an algorithm that will detect the first signs of pain in the neonate using non-invasive video, with the goal of deploying this classifier with an electronic health record interface for quickly alerting the nurse to an expression onset event. From this project, we will learn about recording images of the neonate and the association of the images to pain, and this will form the basis for an extensive follow-on study whether video-based pain expression detection can increase effective neonate-nurse communication.

NEONATAL HEALTH

Moral Distress in Neonatal Intensive Care Unit (NICU) Nurses

*Maribel Vera, RN, BSN
Masters in Nursing Leadership Candidate
Betty Irene Moore School of Nursing
UC Davis, Sacramento, CA*

*Susan L. Adams, PhD, RN, NP
Assistant Clinical Professor
Betty Irene Moore School of Nursing
UC Davis, Sacramento, CA*

Purposes/Aims: The purpose of this study is to explore the lived experiences and perceptions of moral distress in nurses working in the Neonatal Intensive Care Unit (NICU). The goal of this study is to develop an understanding of contributing factors and effects of moral distress.

Rationale/Background: Moral distress is defined in the literature as being the physical and emotional pain caused by situations where a nurse is aware of a moral problem and makes a judgment based on the correct course of action, but is impeded by constraints to act accordingly. These constraints have been identified as lack of time and support, power struggles, hospital policies, and/or legal limits. In addition, working in this type of critical care unit requires effective communication and cooperation with multidisciplinary teams, therefore increasing the risk for moral distress.

Nurses and other healthcare professionals are often confronted with ethically and morally conflicting situations in the NICU. The NICU is a stressful environment and nurses working there are confronted with caring for critically ill newborns with unknown outcomes. There has been limited research specifically addressing the experience of moral distress in NICU nurses and understanding the experience is necessary in order to develop strategies to cope with it.

Undertaking/Best Practice/Approach/Methods/Process: A phenomenological study was conducted to understand the lived experience of moral distress in nurses working in the NICU. The sample was recruited from a 49-bed NICU in a large, urban academic medical center in Sacramento, California, which admits patients from Central California to the Oregon and Nevada borders. Over 150 registered nurses provide care for high-risk neonates with a variety of congenital anomalies and health conditions. Semi-structured open-ended questions were posed to participants. All interview responses were transcribed verbatim from the recordings by the primary investigator. The transcriptions were compared to the recordings to ensure accuracy. The next step of this study will be for two investigators to review the transcriptions and written interview notes for emerging themes and corresponding exemplars that highlight the themes.

Outcomes Achieved/Documented: Nurses described powerful experiences that exemplified moral distress and the associated factors related to the experiences, the impact of the experiences on daily life outside of the NICU, and the coping and supportive mechanisms, which helped to mitigate the impact. Interviews were sometimes accompanied with participant emotionality, such as tearful discourse, in relaying the experiences.

Conclusion: This study is an essential step in understanding the specific challenges NICU nurses face as they encounter morally distressing situations and points to the need for further research as well as possible implications for implementing supportive interventions for nurses who struggle with the effects of moral distress in the NICU.

Abstracts of Poster Presentations

PAIN

PAIN

Interdisciplinary Training for Biopsychosocial Care of Complex Chronic Pain

Lindsay L. Benes, PhD, RN, CNS
Associate Dean for Graduate Education & Evaluation
School of Nursing
University of Portland
Portland, OR

Purpose & Background: In 2011, the Institute of Medicine (IOM) published *Relieving Pain in America*, a call to action specifying the need for a cultural transformation in the way pain is viewed and treated. In 2016, the Interagency Pain Research Coordinating Committee (IPRCC) published the National Pain Strategy (NPS), a vision to advance all recommendations made by the IOM report. Both the IOM report and the NPS highlight clinician education as a central component of the cultural transformation of pain treatment. As part of a pragmatic clinical trial that operationalized the recommendations set forth by the NPS, nurses and behavioral specialists underwent a comprehensive training program to lead an interdisciplinary team in this transformation of pain care. In this presentation, we will describe this multifaceted training program and share qualitative insights from the interdisciplinary team implementing this work. This study was approved by Kaiser Permanente's Center for Health Research IRB.

Method: Nurses and behavioral specialists underwent a multi-modal, multi-faceted training program led by experts in cognitive behavioral therapy and pain coping. Training included a 3-day in-person working session with instruction, role plays, and feedback; audio-recorded small group role plays with feedback; and consultation calls to strengthen nurse and behavioral specialists' work with patients and bring a team approach to solving patient problems and achieving best care. Members of the interdisciplinary team (n=16; 8 nurses, 7 behavioral specialists, 1 physical therapist) completed written field notes throughout the study speaking to multiple aspects of implementation and work with patients and providers. Four of those individuals also participated in in-depth qualitative interviews. Qualitative data were analyzed using thematic analysis.

Results: Recurrent themes revealed that interventionists found this work to be challenging for both the patients and themselves, but found motivation through witnessing shifts in their patients' mindsets. Through the training and work with patients, they recognized that not focusing on a 'fix' for the patient allowed them the space to stay present with the patient. This work fostered their growth as clinicians and shifted their approach with patients. The interventionists spoke to the need to have a firm belief in a biopsychosocial model of health and wellbeing to stand alongside the patients. They noted that the power of the interdisciplinary team is more than the sum of its parts.

Implications for Translation to Practice: This multi-faceted training approach provided the structure, strategies, and practice opportunities to shift their way of working with individuals with complex chronic disease. This shift allowed them to implement a comprehensive, biopsychosocial model of chronic disease management, aligned with best practice recommendations. We propose this training model as a mechanism for enhancing clinicians' ability to actualize principles espoused in the IOM and NPS.

PAIN

Acupressure: Training Patients and the Effects on Pain

*Leslie Johnson, RN, BSN, CCRN
Doctor of Nursing Practice Candidate
Pacific Lutheran University
Tacoma, WA*

Aim: The study will examine the feasibility of training self-administered acupressure techniques and the impact on use of pharmaceuticals and symptoms of pain.

Background: It is estimated that acupressure has been a practice in Traditional Chinese Medicine for at least five thousand years. Acupressure is a therapeutic intervention that is based from the theory that health is defined by the internal energy flow known as qi. This concept is not widely known in Western Medicine but is gaining interest as many studies have shown efficacy in reducing pain symptoms. Acupressure is minimally invasive, relatively inexpensive, easily integrated into nursing practice, and can be self-administered.

Methods: The study participants are adult patients admitted to the hospital following a total hip replacement. The intervention will include a 30 minute in-person acupressure teaching session and the participant will be supplied with an acupressure handout. The participant will be instructed to perform self-administered acupressure once a day during the project. Utilizing Qualtrics, the patients will be asked to complete a RAND SF-36 questionnaire. The rate of acupressure performed, use of pharmaceuticals, and pain symptoms will be assessed at week two and four, following the teaching session, via a Qualtrics questionnaire.

Outcome: The results of this study will be analyzed using Qualtrics and SPSS chi square.

Conclusion: The results of this study can be used as a guide to establish hospital policy and an introduction to incorporating acupressure into nursing for the treatment of pain symptoms.

PAIN

Chinese Immigrant Smokers' Perceptions and Experiences of Lung Cancer Screening and Smoking Behavior Change

Fang Lei, BSN, MPH, RN

Eunice Lee, Associate Professor, PhD, RN, FAAN

School of Nursing

University of California, Los Angeles

Los Angeles, CA

Purpose: This study aims to explore the perceptions and experiences of lung cancer screening (LCS) and smoking behavior change among Chinese immigrant smokers.

Background: Lung cancer incidence and mortality rates are high among Chinese immigrant smokers. Coming from a country with a different smoking policy, culture, and economic background contrasted, Chinese immigrant smokers may change their smoking behaviors and lung cancer screening perceptions after immigrating to the US.

Methods: Guided by the Ethnography approach, we collected data using a qualitative semi-structured intensive individual interview method. Chinese immigrant smokers who were older than 21 years old, immigrated to the US in the last 10 years, and current or former smokers were included. UCLA IRB-approved fliers were distributed in Chinese supermarkets, communities, and in online Chinese forums to recruit participants. Online, telephone, or in-person interviews were conducted in Chinese. Field notes and memos were taken throughout the interviews. Data collected in the interviews were transcribed to English and triangulated with follow-up interviews and dialogues between authors to enhance interpretation. Process coding and constant analysis were used to analyze data.

Results: Ten participants (mean age = 45 years old) participated in the study, 7 males and 3 females. Three themes were found: (1) the trajectory of smoking behaviors influenced by the barriers and facilitators in the context of their social interactions with others; (2) attitudes toward smoking and lung cancer influenced by cultural beliefs, social etiquette, and personal experience; and (3) perceptions about lung cancer screening influenced by health care providers and cultural beliefs. Participants described their changed smoking behavior as a product of social interaction and their knowledge of lung cancer screening was lacking.

Implications for Translation to Practice: Findings from this study can help design culturally tailored smoking control and LCS programs, which can further increase smoking cessation and uptake rates of LCS among Chinese immigrant smokers.

PAIN

Enhancing Chronic Pain Management: Motivational Interview in Lower Back Pain Patients

*Melissa Hines-Antico, RN, BSN, OCN
Doctor of Nursing Practice Student
University of San Diego*

*Valerie Gates, RN, BSN
Doctor of Nursing Practice Student
University of San Diego*

*Timothy Furnish, MD
Anesthesiologist/Pain Specialist
University of California,
San Diego Medical Center*

*Gregory Polston, MD
Anesthesiologist/Pain Specialist
University of California,
San Diego Medical Center*

*Joseph Burkard, DNSc, CRNA
Associate Professor
University of San Diego*

Purpose/Aims: To improve patient pain, enhance quality of life, and decrease opioid usage. The project uses a nurse practitioner led monthly telephone follow-up call utilizing motivational interview techniques. The art of motivational interviewing has been proven to elicit “behavior change” by promoting the individuals’ personal values and beliefs as opposed to externally-driven coercion. The evidence-based project is being implemented to follow-up chronic lower back pain patients in a hospital-based pain clinic

Background: Chronic pain is a common medical condition affecting 85% of the U.S. adult population at some point in their life. If left untreated, patients are affected physically, psychologically, and financially. Nationally, the cost of negative sequelae following a back injury, and the cost to treat lower back pain exceeds \$90 billion per year. Restricted clinic time and a focus on procedural/prescriptive methods for managing pain prohibits patient education regarding self-care, and formation of a relationship with the provider. Preliminary data collection amongst 88 chronic pain patients indicated that a lack of self-care discussion between the provider and patient does impact pain scores, patient perceived quality of life, and tapering of opioid pain medication. This project is an extension of previous data collected and aimed to offer a nurse practitioner driven intervention that supports the patient physically and psychologically.

Method: Implementation of monthly telephone follow-ups, guided by the 5A’s framework (Ask, Advise, Assess, Assist, Arrange) were used to strengthen self-motivated behavior modifications, develop patient-centered outcomes, and outline systematic follow-up care plans. Tools used to record data outcomes included: numeric pain scale and the American Chronic Pain Association Quality of Life Scale. These tools, and a standardized set questionnaire addressing the 5A’s assessed for pain scores, quality of life scores, utilization of self-promoting behaviors, and number of opioid pain medications were recorded monthly. Information gathered was included in the patient’s chart and shared with pain providers on the care team. The process is ongoing for 6 months and will be evaluated at that time for process analysis.

Results: Result collection is ongoing, and will be presented upon completion.

Outcomes Achieved: Preliminary data promotes the implementation of standardized scheduled monthly patient and provider interactions to decrease pain scores, improve quality of life, decrease opioid medication usage and promote patient centered care. This project is further supported by the nursing code of ethics which encourages nursing providers to advocate for the health and safety of their patient while also collaborating with other healthcare providers to reduce health inequalities.

Conclusion: Appropriate identification of chronic pain patients in conjunction with structured and routine follow-up is necessary to prevent costly and harmful complications of chronic pain. Timely utilization of evidence-based interventions for chronic pain can improve patient-provider interaction and promote patient self-care by addressing quality of life issues, decreasing patient pain scores and limiting importance of opioid medications. Patients have a right to self-determination regarding the course of their care. Nurse practitioners can help the patient make informed decisions through changes in self-care behaviors implementing motivational interview techniques.

Abstracts of Poster Presentations

PATIENT SCREENING

PATIENT SCREENING

Postpartum Depression Screening: Educating the Bedside Nurse

*Nadia M. Carrasco, RN, BSN
Masters in Nursing Leadership Candidate
Betty Irene Moore School of Nursing
UC Davis, Sacramento, CA*

*Susan L. Adams, PhD, RN, NP
Assistant Clinical Professor
Betty Irene Moore School of Nursing
UC Davis, Sacramento, CA*

Purposes/Aims: The purpose of this applied project is to develop a learning module based on best practices to educate nurses about postpartum depression and postpartum depression screening in inpatient postpartum maternity units. The goal of the project is to improve the assessment and timely referral for postpartum women who are experiencing postpartum depression.

Rationale/Background: Postpartum depression continues to be a common mental health disorder that affects 15% to 20% of women in their childbearing years. The literature validates the need for postpartum depression screening. Assessment for postpartum depression in the hospital maternity unit offers the earliest opportunity to detect and manage this condition, yet healthcare professionals face barriers with screening and identifying women in this setting.

Undertaking/Best Practice/Approach/Methods/Process: A teaching module was created which addressed 1) the barriers to postpartum depression screening in inpatient settings, 2) how to screen; 3) referring when postpartum depression is identified; and 4) documentation. Experts on postpartum depression were recruited to review the training module. Recommendations from the experts were used to further modify the learning module.

Outcomes Achieved/Documented: With the input of the expert reviewers the learning module was finalized and is ready for implementation. A pre-test will be administered to obtain the staffs' baseline knowledge of postpartum depression and the results will be compared with a post-test to evaluate the effectiveness of the learning module.

Conclusion: The learning module will serve as an educational platform for healthcare professionals. The module will not only focus on postpartum depression education, it will also evaluate the screening, identification, referrals and documentation of postpartum depression.

PATIENT SCREENING

Chlamydia Screening for High Risk Populations

*Kathryn Dickson, RN, BSN
DNP, FNP, ENP Student
University of San Diego
San Diego, CA*

*Karen Macauley, PhD, DNP, FNP-BC, GNP-BC
Associate Dean of Advanced Practice Programs
University of San Diego
San Diego, CA*

Purpose/Aims: To increase chlamydia prescreening and screening for females, ages 15-24, presenting to an Urgent Care with urinary symptoms.

Rationale/Background: Chlamydia is the most common sexually transmitted bacterial infection worldwide. Chlamydia trachomatis is a bacterium that is commonly asymptomatic but highly curable with antibiotics if treated early. If not treated, chlamydia can cause pelvic inflammatory disease and uterine scarring for women, which can lead to infertility or ectopic pregnancies. It can also be a precursor for cervical cancer and endometriosis in women, and potentially transferred to offspring during childbirth. Opportunistic prescreening and screening in urgent care can increase appropriate diagnosis of chlamydia that could have been missed or incorrectly dismissed as solely a urinary tract infection. United States Preventative Services Task Force and Centers for Disease Control recommends routine chlamydia screening for females 15 to 24 years of age because this group is considered high-risk. Routine care is typically provided via primary care providers. However, when given the opportunity in urgent care, sexually transmitted diseases should be included in differential diagnoses when assessing urinary signs and symptoms.

Undertaking/Best Practice/Approach/Methods/Process: Female patients between the ages of 15 to 24 that present to an urgent care for urinary symptoms will be flagged in the electronic medical record for chlamydia prescreening over a three-month time period. The prescreening questionnaire includes four questions to determine if chlamydia screening is appropriate. If prescreening is positive, the patient will be screened (urine sample will be sent for chlamydia testing). Positive chlamydia results will be reported to the patient and treated with appropriate antibiotics. Data will be collected from the medical record to determine the percentage of patients prescreened and screened, subsequent lab results, and treatment prescribed.

Outcomes Achieved/Documented: Pending

Conclusions: Screening for chlamydia should be practiced yearly in primary care for females ages 15 through 24. Urgent care settings should also utilize opportunities to screen for chlamydia including dysuria and urinary frequency visits. Regular chlamydia screening contributes to improved general health and a decrease in chlamydia transmission rates and complications.

PATIENT SCREENING

A Rural Primary Care Intervention for the Identification and Management of Adult Obesity

*Ariana McDonald, BSN, RN, DNP
FNP Student
Pacific Lutheran University
Tacoma, WA*

Background: The rising prevalence of obesity in the United States (U.S.) substantially impacts the health of individuals and places an additional burden on the healthcare system. As of 2016, nearly 40 percent of U.S. adults are considered obese. Primary care providers (PCPs) typically establish rapport with patients and care for their health needs on a longitudinal basis. This places PCPs in an ideal position to reduce the prevalence of obesity with early identification, offering evidence-based treatment recommendations, and providing timely follow-up. However, healthcare providers report numerous barriers in the diagnosis and treatment of obesity such as lack of knowledge, time constraints, and personal biases. This public health concern is magnified in rural primary care settings where management of obesity is coupled with challenges in obtaining care and resources. Additionally, many patients lack awareness of their weight, body mass index (BMI), and the associated health risks involved with being overweight and obese.

Aims: The purpose of this doctoral capstone project is to evaluate whether PCPs are properly screening/identifying, diagnosing, discussing patient weight with treatment recommendations and follow-up care, for obese adults within a rural primary care setting, pre and post education intervention.

Methods: This project will involve a mixed method design using a pre and post education intervention chart review and a patient survey. The Theory of Planned Behavior will guide the development of the education intervention that will utilize the five A's approach for weight loss discussion and management of obese adults. The survey will assess patient perceptions regarding obesity and weight management in primary care. Since rural primary care clinics often lack educational resources that may be available in more urbanized locations, a patient handout will be developed with self-management tips for weight loss.

Analysis: Data analysis will be completed to evaluate the effectiveness of the educational intervention given to providers. The chart review will evaluate whether there is an increase in documentation of the international classification of disease, tenth edition (ICD-10), diagnosis of "obesity" and/or "elevated BMI greater than or equal 30" for individuals with a BMI of 30 or greater, increase in documentation of a weight reduction treatment plan, and increase in follow-up recommendations for obese. Evaluation of improvement in patient perception and knowledge of their weight/BMI, perception of weight loss discussions and recommendations initiated by providers during appointments, and desire for weight reduction will be assessed through a survey, pre and post educational intervention.

Conclusions: Results of this doctoral capstone project may provide valuable insight and recommendations for the healthcare providers of this rural primary care clinic on how they can improve identification, treatment, and management of obese adults and help guide future research projects in combating the obesity epidemic.

PATIENT SCREENING

Time and Motion Evaluation and Patient Satisfaction in HIV Clinics in Harare, Zimbabwe

Abigail Link, RN, MPH

PhD Nursing Student

Department of Child and Family Health

University of Washington

Seattle, WA

Barbara Cochrane RN, PhD

Professor

Department of Child and Family Health

University of Washington

Seattle, WA

Mufuta Tshimanga, MD, MPH

Professor

Department of Community Medicine

University of Zimbabwe

Harare, Zimbabwe

Danuta Kasprzyk, PhD

Research Professor

Department of Child and Family Health

University of Washington

Seattle, WA

Objective: Patient satisfaction is an important component to health care utilization and effectiveness of care. Many factors affect patient's perception of satisfaction, including length of wait time, time spent with the provider, and how respectfully patients are treated by clinical staff. This evaluation was intended to provide clinic-specific baseline measures to guide future quality improvement in patient satisfaction, service delivery, and patient-centered care within public HIV clinics in Harare, Zimbabwe.

Design: Clinic flow data was collected from 603 patients between August 27 to September 14, 2018 at three public HIV clinics in Harare, Zimbabwe. At the time of registration, time record forms were given to patients seeking follow-up HIV services, with times recorded by clinic or study staff as patients moved from station to station throughout the clinic. After completing clinic visits, patients were approached to participate in paper-based patient satisfaction surveys. In-depth interviews were also conducted with 11 health care professionals working in the clinics.

Methods: We conducted a mixed-methods analysis of descriptive statistics using R, (Version 3.5.0) and qualitative analysis of interview data using ATLAS.ti (Version 8.3.1) to categorize common themes reported by staff on their perspectives of patient satisfaction, patient-centered care and recommendations for improvement.

Results: Mean age of survey participants was 40 years, and 72% female. Analysis of time data showed the average wait from arrival at the clinic to seeing a provider was 2h, 10min. The longest wait interval was from arrival to registration which took an average of 1h 14min. The patient-reported average wait time to provider was 1h, 45min, which was considerably less than the actual wait. For patients, the areas of least satisfaction were the service hours, time waiting for providers, and cost of treatment. Patients were most satisfied because they received their medication and many felt they were provided good and quick service. Results from in-depth interviews with staff showed that staff shortage, service fees, and lack of staff salary for 4 months are causes for decreased patient satisfaction. Staff suggested that more staff be hired, the patient service fee should be removed, staff should be paid promptly, and staff should receive continuing education on counseling and appropriate patient treatment.

Conclusion: Patients reported good, overall satisfaction regarding their services and care in relation to their previous experiences of HIV care, which historically included limited medication availability and all day clinic appointments. Extended waiting time due to staff shortage was a major source of patient dissatisfaction. Both patients and staff had similar insights regarding areas of dissatisfaction and recommendations for improvement.

Funding: This project was supported in part by the Thomas Francis, Jr Global Health Fellowship and the Center for Global Health Nursing Field Work Funding.

PATIENT SCREENING

Improving Linkage to Care in the HIV Clinic Setting

*Denisha Cuffee, BSN, RN
DNP, FNP Student
University of Maryland Baltimore
School of Nursing
Baltimore, MD*

Purpose: Linkage-to-care templates (LTCTs) within human immunodeficiency virus (HIV) patient electronic medical records (EMRs) are not all being routinely completed at discharge or closed out within the allotted timeframe. The HIV clinic's current practice is to efficiently discharge patients and effectively link the patient to a primary care provider after discharge. Incomplete EMR LTCTs compromise follow-up care and result ultimately in poor patient outcomes. The purpose of this Doctor of Nursing Practice (DNP) project is to increase the number of completed LTCTs via use of a point-of-care reminder pop-up placed in Outlook calendar of case managers treating HIV patients aged 18 and older in a HIV health clinic.

Rationale: Linkage-to-care (LTC) is a key determinant in improving outcomes for HIV patients. Studies have demonstrated that any form of a reminder method can aid staff in adhering to the standard of practice. In particular, linkage to a primary care provider reliably improved HIV patient outcomes. Studies also show that thorough LTC provided by an HIV clinic may have profound positive influence on whether patients follow through with appointments with providers and stay linked to care.

Methods: A pre-intervention questionnaire was administered to the clinic staff to assess current barriers to linking patients to care. Staff education and training was conducted on setting Outlook calendar reminders for efficiently discharging (linking to care) patients. EMR audits will be conducted to track completed discharges.

Results: Retrospective EMR audits were conducted to assess discharge template completion and to gather other EMR data from January 1, 2018, to present. The project will be successful if there is an increase in the proportion of EMRs at discharge having completed LTCTs and are properly closed out after the intervention implementation. EMR audit data will be tested for pre- and post-implementation differences in completion. Potential patient demographics or staff variable associations with template completion, a dichotomous outcome, will be explored by bivariate and multivariate logistic regression modeling.

Implications for Practice: The results of this project can help staff efficiently link patients living with HIV to primary care, which in return improve patients' overall outcome. Linking patients to care effectively has the opportunity to decrease HIV related complications, comorbidities, and mortality.

PATIENT SCREENING

Protocol for Evaluating a Connectivity System for a Rapid TB Diagnostic Assay in Viet Nam

Lily Nguyen

*Sue and Bill Gross School of Nursing
University of California, Irvine
Irvine, CA*

Sanghyuk Shin, PhD

*Sue and Bill Gross School of Nursing
University of California, Irvine
Irvine, CA*

Purpose: Delayed treatment for tuberculosis (TB) and drug-resistant TB is a major cause of mortality worldwide. We developed a protocol to evaluate the investments required and potential benefits of implementing a World Health Organization (WHO) recommended connectivity system for the rapid TB diagnostic assay (WRD), Xpert MTB/RIF, in Viet Nam.

Background: WHO currently recommends the use of rapid diagnostic assays, such as Xpert MTB/RIF, as the initial diagnostic test for presumptive TB cases given their ability to rapidly diagnose TB and rifampin resistance to guide early and appropriate treatment. WHO also recommends the use of an electronic data connectivity network to automate the process of making test results rapidly available both to clinicians and to laboratory information management systems to improve patient care. GxAlert is one such system and has been implemented in several countries. However, there are limited studies or published information regarding the benefits of using GxAlert under routine program conditions.

Methods: The evaluation protocol was developed in partnership with the Vietnam National TB Program. A literature review was conducted of published articles and grey literature relating to GxAlert implementation and resulting program and clinical measures of efficiency or improved patient care. Key informant interviews and field observations of routine Xpert testing and associated reporting and recording of operational data were conducted with staff members at two Xpert testing sites: the Vietnam National TB Reference Laboratory and the Provincial Level TB and Lung Disease Hospital in Hanoi in order to inform protocol development.

Outcomes Achieved: The evaluation was designed as a prospective cost-effectiveness study comparing program costs and outcomes pre- and post-GxAlert. Key patient and laboratory outcome indicators include: turnaround time (TAT), time to treatment initiation (TTI), error rate, instrument downtime, and capacity utilization. Thirty-two sites will be selected for the evaluation. Two sites, the largest TB reference hospital labs with the highest Xpert testing volume will be purposefully selected and the remaining 30 sites will be selected by probability sampling. The pre-installation baseline measures will be collected for at least one month prior to the installation of GxAlert at each site. GxAlert will be installed in a stepwise phased manner among 172 instrument sites across Viet Nam over a one-year period. Post-installation data will be collected from month four to five, in order to allow a 3-month period for transition and to reflect steady state use of the new system. Costs related to implementation of GxAlert based on financial reports, the provider's perspective, interviews with program staff will be assessed. Daily activity time logs of time spent on recording and reporting will be kept. Cost-effectiveness will be analyzed based on improvement changes in TAT and TTI.

Conclusions: Implementing GxAlert across Viet Nam could potentially improve reporting of TB diagnostic test results and, ultimately, decrease TB mortality rates in Viet Nam. The present study will inform the National TB Program of the expected costs and benefits of nationwide implementation of this system.

Funding: This project was funded by UCI's Undergraduate Research Opportunities Program and Summer Undergraduate Research Program in 2018.

PATIENT SCREENING

Implementing a Multifaceted Workflow Process to Improve ASCVD Screening: A Quality Improvement Project

*Nicole L. Stalter, MSN, ANP, FNP-C
DNP Candidate
Fort Hays State University
Glenwood Springs, CO*

Atherosclerotic cardiovascular disease (ASCVD) is the leading cause of death in the United States (Benjamin et al., 2017; Egan, et al., 2016; Wilson, 2017a; Wilson, 2017b). One out of every three adults have some form of ASCVD (Office of Disease Prevention and Health Promotion [ODPHP], n.d.). It causes life-altering illness and disability, poor quality of life, and hundreds of billions of dollars in healthcare costs each year (ODPHP, n.d.). The majority of ASCVD cases are preventable (Egan et al., 2016). Unfortunately, most adults are not aware of their actual risk for ASCVD. Consequently, they do not make the appropriate preventive changes to reduce their risk. Currently, few healthcare providers are discussing patients' ASCVD risk because the documentation of the risk estimation (RE) is frequently not available at the time of patients' office appointments (Karmali, Brown, Sanchez, Long, & Persell, 2017; Sekaran, Sussman, Xu, & Hayward, 2013). There is little research on methods to increase the documentation of patients' 10-year ASCVD risk. It is necessary to understand what methods will promote the documentation of this risk which will ultimately facilitate clinician-patient risk discussion at the time of patients' appointments and promote prevention of ASCVD. Therefore, a quasi-experimental study with a retrospective chart review will be conducted to determine the effect of a multifaceted workflow process on the documentation rates of the 10-year ASCVD Risk Estimation (10-year ASCVD-RE) among patients 40-79 years of age at a group of HCs in the Western United States.

Purpose Statement with Specific Objectives: The purpose of this project is to increase documentation rates of the 10-year ASCVD-RE on Health Center (HC) patients' ages 40 to 79 years of age by implementing a multifaceted workflow process. The 2013 ACC/AHA Cholesterol Guidelines emphasize ASCVD risk screening. The specific objectives for this project are as follows:

1. By December 31, 2018, there will be a 75% increase, over baseline, in documentation of the 10-year ASCVD-RE on HC patients' ages 40 to 79 years.
2. By December 31, 2018, there will be a 75% increase, over baseline, in documentation of the date of the 10-year ASCVD-RE calculation on HC patients' ages 40 to 79 years.
3. By December 31, 2018, 75% of HC patients with a 10-Year ASCVD-RE $\geq 7.5\%$ will have a lifestyle behavior change recommendation, statin recommendation, statin prescription, aspirin recommendation, referral to a primary care provider (PCP) or specialist, or that the patient was lost to follow-up documented within the electronic medical record (EMR).

PATIENT SCREENING

Theory Application: Caritative Caring and Correctional Nursing

*Hannah N. Gubitz, MSN, RN
PhD Student
College of Nursing
Washington State University
Spokane, WA*

Purpose: At the end of 2016, there were roughly 2.1 million individuals incarcerated in the United States, with 750,000 housed in local jail facilities. Correctional nurses working in these facilities battle custody protocols, social and cultural stigmas, and a constantly fluctuating patient population as they strive to provide competent, holistic care. With facilities allowed to self-select medical models and services provided, there is a distinct lack of standardized care and theoretical framework present in correctional nursing. This paper explores the application of Katie Eriksson's theory of caritative caring to correctional nursing in county jail facilities.

Description of Theory: Centered on *caritas*, or human love, Eriksson's theory focuses on the concepts of human relationship and alleviating suffering. Narrowed down to eight assumptions, Eriksson posited that human life is inherently holy and valuable and that there is no greater act of love and caring than to come alongside our peers and through relationship, help alleviate their burden.

Consistency of Theory: Eriksson's theory has been utilized as framework for studies across the Nordic region, as it more easily lends itself to complementing their existing culture of caring and relationship. While not widely utilized in Western countries, Eriksson's theory offers a deeper, more holistic framework for caring science in nursing.

Theory and Practice: Incarcerated individuals are disproportionately afflicted by mental illness, substance abuse, infectious disease, and a variety of chronic disease processes. Coupled with being incarcerated for extended periods of time and ostracized by society, this patient population arguably suffers more than their non-incarcerated peers. It is in this context, then, that alleviating the suffering of others is of utmost importance and priority. Implementing Eriksson's theory would require flexibility and intentionality to blend the theory with custody and security protocols, as caring relationships are already modified within the correctional context. Regardless, this theoretical framework provides a strong base for correctional nurses to elevate nursing practice, standardize care, and provide highly compassionate, holistic care to those society has sequestered away.

Conclusion: Nurses working in correctional facilities are faced with a variety of barriers to providing competent, holistic care. Eriksson's theory of caritative caring provides a structure for nurses to look beyond the reason for incarceration to the individual, and facilitates the reframing of interventions and policies to alleviate physical and psychological suffering for this often overlooked and vulnerable population.

PATIENT SCREENING

The Elephant in the Room:

Concepts of Communication & Childhood Adversity among Adults

Kimberly A. Strauch, RN, MSN, ANP-BC
Doctoral Student
College of Nursing
The University of Arizona
Tucson, AZ

Jane M. Carrington, PhD, RN, FAAN
Associate Professor
College of Nursing
The University of Arizona
Tucson, AZ

Background and Purpose: Exposure to frequent, prolonged, or intense adversity during childhood results in toxic stress, often manifested as chronic neuro-endocrine and immune dysregulation. Emerging research has linked chronic, toxic stress resulting from childhood adversity to increased morbidity and mortality in adulthood. Two-thirds (64%) of American adults have an Adverse Childhood Experiences (ACE) score of one. Inquiring about a history of childhood adversity is not incorporated into routine primary care practices for a multitude of reasons. Consequently, the evolution and application of childhood adversity in the clinical context has been oversimplified, crudely assessed and often ignored. Effective communication between patients and providers in identifying and understanding the sequelae of childhood adversity and its impact on patient outcomes is a critical first step. Little is known about patient to provider communication of childhood adversity among adults. Thus, the purpose of this concept analysis is to examine two integral concepts that will inform my future body of research: *communication* and *childhood adversity*.

Description/Definition of Concepts: The concepts *communication* and *childhood adversity* were examined using the procedures set forth by Walker and Avant which include: conceptual selection, aims of analysis, conceptual exploration, defining attributes, identification of models, antecedents and consequences, and defining empirical referents. Concept synthesis was driven by exploration of seminal and current literature from several disciplines regarding *communication* and *childhood adversity*. A focused literature search using the search engines CINAHL, PubMed, and PsycINFO with inclusion criteria of “adverse childhood experiences,” “*childhood adversity*,” and “*communication*” provided boundaries for this concept analysis. Exploring patient to provider communication of *childhood adversity* among adults illuminated themes related to the interpersonal and interdisciplinary *communication* of *childhood adversity*, which will inform future work related to communicating adversity and patient outcomes.

Internal Consistency of Concepts/Theories: This concept analysis will identify gaps in both clinical practice and research, which my future research will attempt to minimize. Once the concept analysis has been completed, it will be applied to Shannon’s Information Theory of Communication and Effective Nurse to Nurse Communication Framework while integrating elements from psychosocial, ecological, and resilience theories.

Logic Linking to Research Problem: This concept analysis will promote enhanced conceptual and theoretical understanding, leading to theory adoption, integration, and knowledge development. Through the assimilation of multiple theories, we will link the concepts of *communication* and *childhood adversity* to develop a framework that outlines my prospective research.

Conclusions: The challenges in addressing patient to provider *communication* of *childhood adversity* are multifactorial, yet they have far reaching implications. This concept analysis will serve as a catalyst for informing future research to more readily identify childhood adversity, enhance communication between patients and providers, and ultimately impact patient outcomes.

PATIENT SCREENING

A Feasibility Study Comparing a Phototherapy Kiosk to an Oral Vitamin D Supplement

*Mary S. McCarthy, PhD, RN, FAAN
Madigan Army Medical Center
Tacoma, WA*

*Evelyn B. Elshaw, MS, RD, CD
The Geneva Foundation
Tacoma, WA*

*Barbara M. Szekeley
The Geneva Foundation
Tacoma, WA*

Vitamin D deficiency negatively affects health at all ages, contributes to accelerated bone loss during adulthood, and has been linked to a growing list of conditions including musculoskeletal injuries, immune dysfunction, inflammatory and metabolic disorders, depression and suicide, and cardiovascular disease, with a high likelihood of degradation of Warfighter resilience and readiness.

Purpose: The purpose of this trial is to demonstrate the capability of a standing phototherapy kiosk (SPK) to stimulate cutaneous vitamin D₃ and subsequent production of circulating 25 hydroxyvitamin (OH)D as safely and efficiently as an oral vitamin D₃ supplement.

Background: Optimal production of vitamin D comes from sun exposure, however, fear of skin cancer, premature aging, climate interference, and potential heat injuries for military populations, limits recommendations for even a safe level of exposure. The only alternative has been consumption of vitamin D supplements, yet there is a paucity of evidence for how much, how often, and for how long one should consume supplements. UVB radiation with a wavelength of 290-320 nm penetrates the exposed skin and efficiently produces vitamin D₃ using convenient kiosk technology.

Methods: This prospective cohort feasibility study has three aims: 1. Determine acceptability and feasibility of a standing phototherapy kiosk (SPK) designed as a self-care intervention; 2. Demonstrate that narrow spectrum UVB delivered by the SPK is equivalent to recommended daily D₃ supplementation to raise or maintain serum 25(OH)D levels; and 3. Examine the relationship of demographic variables, including gender, age, body mass index, physical activity, ethnicity, skin type, season, and sun exposure to serum 25(OH) D levels in both treatment arms. Participants are randomized to either the SPK or the 600 IU daily D₃ supplement for 10 weeks. The SPK is an innovative, networked, stand-alone technology that stimulates endogenous vitamin D production with two ~5-minute treatments per month. Testing is performed in an ambulatory setting where enrolled participants with variable baseline levels of 25(OH)D present for a treatment dose, based on Fitzpatrick skin type category, every other week throughout the study period. The primary outcome is serum 25(OH)D level. Descriptive statistics, repeated measures ANOVA, and correlational analyses will be used to examine group differences across three time points.

Results: Recruitment goals have been met in 6 months; 98 adult volunteers, average age 37.7 years, mostly female (65%), and Caucasian, have been enrolled; 22% have completed all treatments. Baseline 25(OH)D was 27.4 ng/mL and 29.8 ng/mL for the oral supplement group and SPK, respectively. Attrition has been low at 7% and user acceptability ratings are high for ease of use and satisfaction with the SPK experience.

Implications for Translation to Practice: At a time when self-care measures are highly valued for health promotion, programmed UVB phototherapy available in the community for adults may prove to be a safe, efficacious alternative to oral vitamin D supplementation when needed.

Funding: This clinical trial was supported in part by a grant from Benesol, Inc. #217121

Disclaimer: *The views expressed are those of the authors and do not reflect the official policy of the Department of the Army, the Department of Defense or the U.S. Government.*

The investigators have adhered to the policies for protection of human subjects as prescribed in 45 CFR 46.

PATIENT SCREENING

Implications of School Nurses' Self-Care Practices

*Kieley Hicks
Student Nurse*

*Barrett, College of Nursing and Health Innovation
Arizona State University
Tempe, AZ*

*Lisa Jaurigue
PhD, RN, CNE
Barrett Honors Faculty
Arizona State University
Phoenix, AZ*

Purpose/Aims: To explore implications of school nurses' self-care practices, which stems from research that investigates self-care practices of nurses in the school setting in Arizona, United States of America. This will help to better understand what school nurses are currently doing in terms of self-care.

Rationale/Conceptual Basis/Background: There is literature that supports self-care increasing attentiveness, resiliency, and effective safety outcomes (Halm, 2017). With this, the benefits of self-care can clearly be seen when applied to the health care profession. There is information in the literature regarding self-care practices of acute care setting nurses, but information is limited when regarding the self-care practices of school nurses. The information about the benefits of self-care combined with the lack of available research of self-care in school nurses warrants an investigation into this topic. This research study has been ASU IRB approved.

Methods: Data for this study is collected through the use of a quantitative survey. The research tool being used in this study is the Self-Care Questionnaire from the Institute for Functional Medicine. The survey is taken, with permission, to school nurse meetings throughout Arizona school districts. At these meetings, school nurses anonymously fill out these surveys and the data is then analyzed.

Results: The data collection is currently in process. It is to be completed by February of 2019. The findings will be reported under the four categories of physical, mental/emotional/spiritual, professional life/work/career, and social life/family/relationships. This study is anticipated to have 100 research participants.

Implications: The assessment of self-care practices of school nurses will contribute to a foundation that can enable further research to take place. The implications of school nurses' self-care practices will allow for a better understanding on how to improve the current self-care practices of school nurses.

Reference:

Halm, Margo. (2017). THE ROLE OF MINDFULNESS IN ENHANCING SELF-CARE FOR NURSES. *American Journal of Critical Care*, 26(4), 344-349.

Abstracts of Poster Presentations

PATIENTS IN ACUTE CARE

PATIENTS IN ACUTE CARE

Circadian Disruption in Patients with Acute Respiratory Distress Syndrome

*Pei-Lin Yang, MSN, RN
PhD Student
School of Nursing
University of Washington
Seattle, WA*

*Elizabeth C. Parsons, MD, MSc
Assistant Professor, Division of Pulmonary,
Critical Care, and Sleep Medicine
VA Puget Sound Health Care System
University of Washington, Seattle, WA*

*Robert L. Burr, PhD
Professor, Biobehavioral Nursing and
Health Systems, School of Nursing
University of Washington, Seattle, WA*

*Teresa M. Ward, PhD, RN
Professor, Psychosocial and Community
Health, School of Nursing
University of Washington, Seattle, WA*

Background and Purpose: Sleep deficiency, including inadequate amount of sleep, poor sleep quality, and variability in timing, is a concern among survivors of acute respiratory distress syndrome (ARDS). Complaints about the timing of sleep may indicate disturbances in circadian rhythms versus the amount of sleep obtained. To date, few studies have examined circadian rhythms in ARDS survivors. The purpose of this study was to examine circadian rhythms in 14 ARDS survivors 3 months post hospital discharge and compare to community dwelling adults in the U.S.

Methods: A secondary analysis of a prospective observational cohort pilot study of 20 ARDS survivors was conducted. Participants completed sleep diaries and wore actigraphy for 9 consecutive days 3 months post discharge. A fixed period 24 hour cosinor model and non-parametric circadian rhythm analysis (NPCRA) was conducted to characterize activity strength (MESOR), rhythm strength (magnitude), rhythm phase (acrophase), day to day regularity (interdaily stability [IS]) and the fragmentation of rest-activity pattern (intradaily variability [IV]). We also compared the results from cosinor and NPCRA analysis with those from a sample of community-dwelling US adults (n=578) (Cespedes Feliciano et al., 2017).

Results: Cosinor analysis showed that the mean MESOR was 2.9 (\pm 0.43) natural log (ln) counts, the mean magnitude was 1.8 (\pm 0.39) ln counts, and the mean time of peak activity (acrophase) was 15:24 (\pm 2:03). NPCRA-derived acrophase was similar with cosinor analysis. Also, NPCRA showed the mean IS was 0.32 (\pm 0.1) and the mean IV was 0.55 (\pm 0.18). In comparison to community dwelling adults, participants with ARDS had a significantly weaker circadian rhythm strength ($p < 0.001$) and activity strength ($p < 0.001$), a later circadian rhythm phase (phase delay) ($p = 0.17$), and significantly less interdaily stability of 24-h rhythm ($p < 0.001$).

Conclusions and Implications: In this small sample of ARDS survivors, irregular circadian rhythms and a delayed circadian phase was common. A better understanding of circadian rhythms in ARDS survivors may provide new knowledge for the development of interventions to improve sleep and daytime function among ARDS survivors.

Funding: Supported by NIH/ National Institute of Nursing Research, Center for Research on the Management of Sleep Disturbances (P30 NR 011400, TMW, ECP); Center for Innovation in Sleep Self-Management (P30 NR 016585, TMW); Ministry of National Defense Taiwan PhD Scholarship (PLY).

Reference:

Cespedes Feliciano, E. M., Quante, M., Weng, J., Mitchell, J. A., James, P., Marinac, C. R., . . . Hipp, J. A. (2017). Actigraphy-Derived Daily Rest-Activity Patterns and Body Mass Index in Community-Dwelling Adults. *Sleep*, 40(12). doi:10.1093/sleep/zsx168

PATIENTS IN ACUTE CARE

Social Needs & Resources in the Enhancement of Discharge Support: The NEEDS Pilot Study

*MJ Tran, MBA, BSN
PhD Student, College of Nursing*

*Sonja Raaum, MD, FACP
Hospitalist, General Internal Medicine
School of Medicine*

*Andrea Wallace, PhD, RN
Associate Professor
College of Nursing*

*University of Utah
Salt Lake City, UT*

Purpose/Aims: The purpose of this pilot study was to map a process for assessing patients' social needs and supportive resources (SocNSuppR), and for systematically communicating findings to inpatient discharge teams.

Rationale/Conceptual Basis/Background: As much as \$17 billion could be saved annually by preventing hospital readmissions. SocNSuppR play an important role in health outcomes, but little is known about the impact of systematic assessment of SocNSuppR on clinical decision-making. Systematically identifying SocNSuppR during hospitalization could improve discharge planning by addressing needs that affect care and contribute to perceptions of readiness for discharge and, subsequently, readmissions.

Methods: This pilot study was conducted at the University of Utah Hospital from May to June 2018 and involved two participant populations: 1) hospitalists, unit-based case managers and nurses who participated in general medicine discharge planning rounds; and 2) adult patients admitted under the care of a general medicine team.

Patients' SocNSuppR were assessed using a 10-item social needs survey, and an interactive supportive resource assessment (Adapted Colored Eco-Genetic Relationship Map, D-CEGRM). Patients also completed the Readiness for Hospital Discharge Scale (RHDS). Healthcare team members assigned to patient participants were asked to complete the Provider RHDS. Results of the SocNSuppR assessments were then disseminated among discharge team members. Using a checklist, disciplines involved in discharge planning were asked whether the information was new to them, if it contributed to their ratings of patient readiness of hospital discharge, and details of how the information is integrated in decision-making during discharge planning.

Results: For four patients, in-depth, detailed process notes were collected to identify how SocNSuppR information can be integrated into discharge processes. Each assessment uncovered information unknown to the healthcare team and helped to maximize efficiency. Patient interviews took approximately 40 minutes to complete and dissemination to each discipline took 5 minutes on average. Ideal time to disseminate results was prior to daily discharge planning rounds, allowing all disciplines to identify discharge planning interventions. Physical and occupational therapy assessments were vital in discharge planning, and offered functional assessments of patients' anticipated home environments. In addition, while often a role most intimate with patients and families, patients' direct care nurses were unfamiliar with care plans and social information due to shift changes or float pool utilization to cover staffing shortages. In fact, patients often admitted they were unfamiliar of their nurse, but were able to identify their hospitalist. The pilot resulted in a 9-step protocol to guide future research.

Implications for Translation to Practice/Further Research: This pilot mapped a process to systematically identify and disseminate patients' SocNSuppR to healthcare teams. The utility of systematically including SocNSuppR in discharge planning was supported as all information collected was identified as new information by all disciplines involved, and facilitated team-based collaboration. Future research will build upon this pilot to understand how knowledge of SocNSuppR impacts discharge planning and, ultimately, patient outcomes.

PATIENTS IN ACUTE CARE

Connecting Provider and Patient to Reduce Postoperative Cognitive Decline

*Nichole Carrigan, RN, CCRN
Doctoral Student
College of Nursing
University of Arizona
Tucson, AZ*

*Jane M. Carrington, PhD, RN, FAAN
Associate Professor
College of Nursing
University of Arizona
Tucson, AZ*

Purpose: Postoperative cognitive decline (POCD) is the most common surgical complication in older adults, with an estimated 40% of patients over 60 years of age having POCD at time of discharge, and 10% continue to demonstrate POCD three months following discharge. POCD leads to subsequent pneumonia, decubiti, and deep vein thrombosis. Current evidence suggests 40% of all POCD cases are preventable through utilization of appropriate cognitive screening tools recommended by the National Surgical Quality Improvement Project for the Perioperative Brain Health Initiative. Here I describe a planned project to increase patient-provider (CRNA) communication of risks for POCD.

Background: The risks for POCD is increasing as our population ages. By 2050, 83 million adults will be greater than 65 years of age. As the elderly population continues to grow, it will place greater demands on surgical services, demonstrating the imperative need to continue strategy development to meet the requirements of ensuring high-quality care to optimize outcomes for geriatric surgical patients. Early, sensitive preoperative screening can assist the CRNA to address identified risks and increase patient safety.

Theory Description: An adaptation to the Effective Nurse to Nurse Communication framework will be used to guide this quality improvement project. The patient sends a message to the CRNA, consisting of a score related to cognitive health. The CRNA is alerted of the score and the need to modify anesthetic technique to reduce additional risk factors potentiating the development of POCD.

Process Used: This quality improvement project will use a digitalized 4-item questionnaire of the Cogstate Brief Battery presented to older adult patients during the preoperative screening assessment. Cogstate Brief Battery will assess four domains of cognitive function including psychomotor function, learning, attention, and working memory using a playing card stimulus in which patients are required to answer yes or no, unaffected by language, education, culture, or practice effects and is appropriate for use in patients ages 6 to 99. The system will calculate a score based on the timing of patient response, enabling immediate results available for provider review who will determine if modification to the anesthetic or surgical plan will be required for patients identified as at risk. Evidence demonstrates Cogstate Brief Battery test through Cognigram software has increased sensitivity for detection of subtle changes in cognition when compared with conventional neuropsychiatric testing used for cognitive assessment. Further benefits include the ability for repeat testing with high test-retest validity at 10 minutes, 1 week, and 1 month following surgery.

Logic Linking Theory to Project Problem: Early detection and prevention are crucial to optimizing surgical outcomes in the geriatric population. This project will help identify patients at risk for POCD and whether modification to the anesthetic plan is needed. A sensitive screening tool will enhance quality improvement for both patients and CRNAs to ensure best efforts for optimal surgical outcomes.

Conclusion: This quality improvement project will bring best evidence to the pre-surgical assessment process to reduce POCD and increase safety for the geriatric population.

Abstracts of Poster Presentations

**PROFESSIONAL, POLICY,
AND WORKFORCE ISSUES**

PROFESSIONAL, POLICY, AND WORKFORCE ISSUES

Nurse-Patient Empowerment: Magnet Versus Non-Magnet Hospitals

Mai Yaseen, PhD
School of Nursing
Loma Linda University
Loma Linda, CA

Ellen D'Errico, PhD
Associate Professor
School of Nursing
Loma Linda University
Loma Linda, CA

Iris Mamier, PhD
Associate Professor
School of Nursing
Loma Linda University
Loma Linda, CA

Patricia Radovich, PhD
Director of Nursing Research
Loma Linda University Health
Loma Linda, CA

Purpose and Aims: To explore the relationships between organizational, nurse, and patient empowerment at a Magnet designated hospital versus a non-Magnet hospital.

There are three aims to the study. Aim 1 examines the relationship between the level of organizational empowerment and individual nurse self-empowerment (self-efficacy). Aim 2 examines the relationship between individual nurse self-empowerment and patient empowerment. Aim 3 investigates if there are any differences in empowerment levels between a Magnet and non-Magnet designated hospital.

Background: Patients must feel empowered to make decisions and participate in their care however; it is the healthcare provider's role to prepare patients to make these decisions. Nurses spend more time providing care to patients compared to other healthcare providers. Nurse attitudes and behaviors influence patient empowerment and can result in improved patient satisfaction. Nurses must feel empowered in order to empower their patients. When nurses are satisfied with their job, those work environments generally have high levels of organizational empowerment, allowing individual psychological empowerment to flourish. An empowered work environment enhances positive outcomes for both nurses and patients.

Methods: A descriptive, correlational design employing a quantitative survey method was used in this study with a sample of 102 nurses and 100 patients from a non-Magnet hospital and 98 nurses and 100 patients from a Magnet hospital. The Conditions of Work Effectiveness Questionnaire (CWE-II) and the General Self-Efficacy scale (GSE) was used in an online survey to explore nurses' perception of their organization's effectiveness, personal nurse empowerment and self-efficacy. A separate patient survey using the Patient Perception of Patient-Empowering Nursing Behaviors Scale (PPNBS) explored patient perception of nurses' empowering behaviors among Medical/Surgical nurses and patients.

Results: Findings revealed a significant relationship between organizational empowerment and nurse self-empowerment. Nurses perceived higher organizational empowerment and self-empowerment at the Magnet hospital compared to the non-Magnet hospital. There was no significant difference in patient perceptions of how nurses empowered them at either hospital setting.

Implications: Patients reported high levels of empowerment and satisfaction at both hospitals possibly indicating professional fidelity of the nurses despite different empowerment levels between Magnet and Non-Magnet nurses. Further study is needed to determine factors motivating nurses to empower their patients in both Magnet and non-magnet settings.

PROFESSIONAL, POLICY, AND WORKFORCE ISSUES

Modeling Effectiveness of Health Care Transition Systems

LisaMarie Turk, MSN, RN, PhD Candidate

*Robert Wood Johnson Foundation Nursing and Health Policy Collaborative Fellow
College of Nursing
University of New Mexico
Albuquerque, NM*

Christine E. Kasper, PhD, RN, FAAN, FACSM

*Dissertation Committee Chair
Dean and Professor
College of Nursing
University of New Mexico
Albuquerque, NM*

Study Purpose: This study is designed for modeling and exploration of systems associated with health care transition (HCT) for adolescents and emerging adults (AEA) with special health care needs (SHCN) (hereinafter referred to as AEA-SHCN).

Background/Relevance: HCT for AEA-SHCN is generally defined as “transfer of adolescents and young adults with chronic physical and medical conditions from child-centered to adult-oriented health care systems.” It is a complex public health problem directly affecting, annually, an estimated 4 million children and families in the United States. Ineffective HCT further impacts broader society, as evidenced in high and rising public health care costs attributable to both avoidable health care utilization and poor health risk mitigation for individuals with SHCN.

Given its broad scale of impact, HCT for AEA-SHCN is increasingly recognized as a research imperative. While it is broadly acknowledged that interactions among organizations are needed to address complex public health problems, relations among organizations associated with HCT are under-investigated and poorly understood.

The literature indicates that interactions among health care systems are crucial in capacity development and sustainability of HCT for AEA-SHCN; however, little is known about the structure of these interactions. There is no research that explores HCT for AEA-SHCN as a complex system, particularly as a method through which to define and study systems dynamics for HCT for AEA-SHCN. HCT systems are described as complex, aligning with the complexity of the population the system is designed to serve, but no available research uses complex systems methodology; rather, isolated elements are the focus of research, with no evidence available that examines dynamics and interdependence among actors within the system.

Methods: This study will use a Systems Dynamics model to examine HCT systems for AEA-SHCN.

Results: This study is in-progress.

Implications: This study will add to nursing’s professional contributions to the science on transitions of care, care coordination, and health policy. It offers an innovative approach to modeling studies of interrelationship among elements in health services systems, thus advancing understanding of complex systems and policy subsystems associated with administration and policy development for health services, broadly, and particularly, for HCT for AEA-SHCN. This proposed study may serve as a prototype for conducting similar studies nationally and may inform future research in nursing, health services, and complex systems.

PROFESSIONAL, POLICY, AND WORKFORCE ISSUES

Expert Review Consensus of Urinary Catheter Content

Susanna Shkrabak, BSN, RN-BC, PHN
Master's Student at Betty Irene Moore School of Nursing
Sacramento, CA
Susannashkrabak@gmail.com

Purposes/Aims: The purpose of this quality improvement project was to gather expert review of urologic content specific to catheterization to build an education module for nurses on medical-surgical floors at a large teaching medical hospital in Northern California. It will aim to bridge the knowledge deficit and improve patient outcomes by providing an overview of human anatomy and physiology related to Urology, medical equipment used for urinary catheterization, institutional policy and procedures, management and care, troubleshooting, and techniques to overcome complications related to catheterization.

Rationale/Background: Improper placement of a urinary catheter can lead to significant morbidity and mortality. Traumatic or difficult catheterizations have been responsible for acute kidney injury, intensive care admission, urosepsis, blood transfusion, and increased hospital stay and costs. Studies suggest that physician and nursing education is inadequate in preparing health care professionals to understand and approach difficult urinary catheterization.

Undertaking/Best Practice/Approach/Methods/Process: Research and literature review was conducted in order to identify important information for the content outline. Nine experts were recruited to review the content in three phases to ensure that the content captured pertinent information and was within the scope of practice of registered nurses. Utilizing Qualtrics.com, a template questionnaire was developed and emailed to the expert reviewers to guide feedback.

Outcomes Achieved/Documented: The outline of urologic content underwent three drafts. Information obtained from experts was discussed in a committee focus group and edits were applied based on the feedback provided.

Conclusions: The content post expert review can be used to develop modules, continued education courses, and online resources for nurses.

PROFESSIONAL, POLICY, AND WORKFORCE ISSUES

Communication and Teamwork in the ICU: Development of an Interprofessional Simulation

*Emma J. Blackmon, PhD(c), MS, RN
Doctoral Candidate
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA*

*Kevin Floyd, RN, MS, CCRN
Nurse Manager, Cardiothoracic &
Neurosurgical ICU
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA*

*Kupiri Ackerman-Barger, PhD, RN
Assistant Clinical Professor
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA*

*Samuel Clarke, MD
Assistant Professor
Emergency Medicine
University of California, Davis
Sacramento, CA*

Purpose: The purpose of this project was to develop a high-fidelity simulation to examine and observe interprofessional provider communication and teamwork behaviors in a simulated Intensive Care Unit (ICU) setting.

Background: Communication and teamwork are vital to the delivery of quality and safe patient care, particularly in the dynamic, complex and high-risk environment of the ICU. However, there are few studies examining interprofessional ICU provider communication and teamwork in a non-emergent setting, around high-risk, low-frequency events. Simulation has been increasingly used for the development of team training and has been shown to improve attitudes toward interprofessional collaboration and communication. In the ICU environment, simulation lends itself to the development and ongoing maintenance of the skills and expertise required to care for patients with highly variable physiology and inconsistent presence of ICU providers.

Methods: This project was part of a larger research study to determine how the attitudes and perceptions among ICU providers differ after participating in either a focus group/didactic session or high-fidelity simulation. The development of the interprofessional critical care simulation was based on an extensive literature review across a variety of healthcare settings examining content, team structure and intra-/interprofessional roles. The simulation content was chosen based on an existing literature gap identifying a lack of interprofessional simulations in the critical care setting that were not based around code-type events. The content was agreed upon and the simulation was developed, revised and tested with experts from nursing, critical care medicine, respiratory therapy for relevance to practice and interprofessional nature.

Outcomes Achieved: The interprofessional critical care simulation was finalized in July 2017 after conferring with content experts. The high-fidelity simulation scenario was the pronation of a critically ill adult patient in an ICU by an interprofessional team. The team consisted of up to 6 providers, including registered nurses, respiratory therapists, lift team members and physicians and was created to last 15-20 minutes. Each of the six simulations were observed by three trained individuals utilizing a tool to assess communication, coordination, cooperation and situational awareness. The simulation consisted of a pre-brief, delivered by the primary investigator, including a review of the rules, expectations, simulator, environment and debriefing. The interprofessional critical care team was updated with clinical data relevant to the simulation, necessary equipment and appropriate team members present to perform the proning maneuver based on existing policy and procedure.

Conclusions: Interprofessional education and practice are expected in healthcare's rapidly advancing environment. Communication and teamwork are the cornerstone of effect interprofessional practice, but little time is given to the development of on-going education dedicated to the awareness and improvement of interprofessional practice. Continued opportunities to participate in activities to understand and improve communicative behaviors, role identification and teamwork are necessary to navigate and care for critically ill patients in the ICU.

Funding: This study was supported through scholarship from the Gordon and Betty Moore Foundation.

PROFESSIONAL, POLICY, AND WORKFORCE ISSUES

The Impact of Nursing Incivility on Black Nurses in the Acute Care Setting

*Sherena Edinboro, RN, BSN
Graduate Student, Master of Science-Leadership
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA*

*Kupiri Ackerman-Barger, PhD, RN
Assistant Clinical Professor
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA*

*Jann Murray-Garcia, MD, MPH
Assistant Clinical Professor
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA*

Purpose: The purpose of this study was to examine the experience of incivility and how it affects Black nurses in the acute care setting. This study also aimed to identify the effect incivility has on Black nurses' career trajectory and mental health.

Background: Incivility affects approximately 85% of all nurses. It is estimated that 61% of nurses in the United States work in the acute care setting, and of that only 9.9% of registered nurses self-identify as Black or African-American. However, to recruit, retain and diversify, the work force with more people of color, particularly Black nurses of color, their experience of incivility must be explored.

Methods: A qualitative descriptive approach was used, and 14 one-on-one semi-structured interviews of male and female licensed registered nurses from six states were conducted. Participants were identified and recruited via convenience sampling, email and snow-ball sampling. The thematic analysis method was applied to categorize and interpret the data.

Results: Analysis resulted in several themes emerging, the strongest of which were as follows: (1) Acts of Incivility caused Black nurses to feel as though they had to work twice as hard to prove themselves as competent, and, (2) they were constantly second guessing themselves during routine tasks. As a result, (3) they frequently experienced anxiety, stress and/or depression in the work environment. The nurses emphasized, (4) a need to not only diversify but to cultivate a more culturally inclusive work environment, starting from the top of organizations, starting with management, followed by nurses and then ancillary staff as well.

Implications: This study identifies the need for more Black nurses in the acute care setting and the necessity to mitigate experiences of incivility by identifying its occurrence and providing the necessary training to help staff end it. This is crucial to provide adequate support to nurses from marginalized minority groups, specifically in efforts to recruit and retain Black nurses in the acute care setting.

PROFESSIONAL, POLICY, AND WORKFORCE ISSUES

Journey to One System Nursing Professional Practice Model

*Laurie Ecoff, PhD, RN, NEA-BC
Vice President
Center of Nursing Excellence
Sharp HealthCare
San Diego, CA*

*Lindsey Ryan, PhD(c), RN, ACNS-BC, NE-BC
Manager, Nursing Innovation and Performance Excellence
Nursing Education
Sharp Grossmont Hospital
La Mesa, CA*

Purpose/Aims: The purpose of the project was to elevate and standardize professional nursing practice across a seven-hospital system. The aim of the project was to develop one professional practice model (PPM) for a seven-hospital healthcare system.

Rationale/Background: According to the American Nurses Credentialing Center (ANCC), Magnet Recognition Program, a PPM is an overarching conceptual framework and schematic description of how nurses practice, collaborate, communicate and develop as professionals to provide the highest-quality care for those they serve. Magnet designation criteria requires hospitals to have clinical nurses involved in the development, implementation and evaluation of a PPM. The system had three Magnet hospitals and two hospitals on the journey to Magnet designation and five separate and distinct PPMs. The Center of Nursing Excellence (CONE), established by the system to advance the profession of nursing, had oversight of the development of one PPM. CONE members established a plan to create one PPM.

Description of Best Practice: CONE leaders and members reviewed Magnet criteria for the development of a PPM and decided to host a one-day workout session to develop one model. A stakeholder analysis identified key participants. A literature search and review of recent presentations at the Magnet conference revealed strategies for successful development of a PPM. Participants convened for the workout session and learned about PPMs, reviewed the system's five models, conducted brainstorming sessions about desired elements and drew and presented initial graphical depictions of a model. Participants and hosts sat at tables intentionally mixed by hospital and role to promote relationship development and diversity of thought. A graphical designer was present for the report out to facilitate creation of one model.

Outcomes: Identified desired outcomes included percent clinical nurse participation, knowledge and understanding of a PPM, and most importantly, creation of one system PPM.

The workout evaluation reflected that 35 percent of participants were clinical nurses with the remainder being managers (30 percent), clinical nurse specialists (19 percent), directors (11 percent) and chief nursing officers/vice presidents (5 percent). This is an important outcome as it reflected clinical nurses as the largest participant group.

Pre-then-post evaluation of the workout session revealed statistically significant ($p = .05$) increases in participant ability to 1) identify elements of a PPM, 2) identify what guides practice as a registered nurse, 3) explain a care delivery model, 4) identify what guides relationships with interprofessional team members and 5) know how to apply a PPM.

Output from the workout, elements and graphical depictions, led to an iterative process of final PPM elements and design of the model. Evaluation of the final model asked stakeholders to rate their level of agreement about how the elements of the model meet the required Magnet attributes. Next steps involved education about the model and integration into practice.

Conclusions: Careful planning, including change management strategies, can result in the creation of one PPM for a hospital system. Recommendations for ongoing evaluation of the PPM addresses the impact of the model on patient, nurse and organizational outcomes.

PROFESSIONAL, POLICY, AND WORKFORCE ISSUES

Constructing Professional Identity: When Non-Nurses Supervise School Nurses

*Samantha Blackburn, PhD, RN
Assistant Professor; Graduate and School Nurse Program Coordinator
School of Nursing
California State University Sacramento
Sacramento, CA*

Purpose: This qualitative study investigated the experiences of a selected group of California school nurses (SNs) regarding supervision by school health administrators (SHAs) who were or were not nurses. Study aims were to explore the types of supervisory structures in place for SNs, compare the relationships between SNs and SHAs who were or were not SNs, and analyze school district contextual factors influencing their relationships and the strategies SHAs employed to get SNs' needs met.

Background: The need for school health programs is well established. School nurses serve as the primary workforce addressing schoolchildren's chronic, acute, and behavioral health conditions during the school day. In California, there is no mandate to employ an administrator focused specifically on school health programs, nor are there specific guidelines for SHA qualifications. Though state and national school nurse organizations recommend that SNs should only be supervised by school nurse administrators, this is sometimes not the case in California. The state does not collect data on who, if anyone, manages school district health programs.

Methods: This qualitative study employed a grounded theory, social constructionist approach to explore the perspectives of SHAs, SNs, and deputy SHAs. Using both purposive and snowball sampling, thirty semi-structured interviews were conducted with SHAs and their staff, supervisors, and deputy SHAs across California. Open-ended interview questions explored SHA-SN supervisory structures, the relationships between SNs and SHAs who did or did not have a background in nursing, the strategies non-nurse SHAs employed to meet SNs' needs, and school district contextual factors influencing their relationships. Interview data was organized using NVivo, a computer-assisted qualitative data analysis software program.

Results: The three primary themes are: 1) School district hierarchies marginalize school health programs, SHAs, and SNs; 2) In response to this marginalization, SNs prefer to be supervised by SN administrators, as this reinforces construction of their professional identity. SNs engage in exclusionary establishment of jurisdictional boundaries with SHAs and other school health staff. They defend their professional boundaries "above" them through a strong preference for SN administrators, and "below" them by defending against licensed vocational nurse and unlicensed assistive personnel encroachment on their position in district hierarchies; 3) SNs and SHAs have created a variety of administrative and supervisory structures to establish jurisdictional boundaries. In many cases where the SHA is not a nurse, a "lead school nurse" or deputy SHA role is devised to serve as an intermediary between SNs and SHAs.

Implications: Elevating the roles of both SNs and SHAs could increase interest among SNs in becoming SHAs. Professionalizing the role of SHAs could also strengthen supports for SNs. A first step in such professionalization is to collect statewide data on SHAs (e.g., title, job description, professional background). SHAs, other administrators, SNs, allied staff, and school health researchers should collaborate to establish core competencies for SHAs and related training to better support SNs. These supports could improve the efficacy of SHAs and supervisory structures for SNs, and ultimately help schools better ensure that students are healthy, safe, and ready to learn.

PROFESSIONAL, POLICY, AND WORKFORCE ISSUES

Examining Burnout and Resilience across a Health System to Promote Wellbeing

Lesly A. Kelly, PhD, RN

Assistant Professor

College of Nursing and Health Innovation

Arizona State University

Phoenix, AZ

Perry M. Gee, PhD, RN

Nurse Scientist

Nursing Research and Analytics

Dignity Health

Phoenix, AZ

Heather Ryan, BSN, RN

Research Assistant

College of Nursing and Health Innovation

Arizona State University

Phoenix, AZ

Purpose: Examining the healthcare workforce is best achieved longitudinally and with linkages to actual clinician data. Through an academic-healthcare system collaboration, first year strategic funding was used to initiate a nurse survey to collect data on burnout and resilience for analysis in relation to work-related outcomes. The ultimate goal of the project is to create a longitudinal database to support wellbeing initiatives in the healthcare system and generate future funding opportunities for research. The preliminary findings reported here include the first round of data collection, including nurse burnout and resilience workforce data across four hospitals in a health system. Additionally, we describe the academic-healthcare system relationship required to achieve outcomes.

Background: The national attention to clinician burnout has raised awareness that individuals can experience symptoms of burnout; however, recent understanding has recognized that burnout is a workplace condition and not a mental disorder. The increased awareness around the work environment and role of the organization in supporting the prevention and decrease of burnout has created an emphasis on promoting wellbeing, organizational resilience, and joy at work. As such, leaders recognize the need for quality measures and longitudinal understanding of their workforce wellbeing. In an initiative to build a unique wellbeing dataset, partnership with researchers and the university supported a process to create a robust annual survey that included validated of burnout and resilience

Methods: Annual surveys are given to all nurses (n=3700 nurses) in four hospitals within one system in a single state. First round data collection (March 2018) included the Maslach Burnout Inventory, the Connor-Davidson Resilience Scale and investigator-derived work related questions. Support for data collection was promoted through attending shared leadership and staff meetings, rounding on units, and working closely with hospital facility leadership. Ongoing data analysis will include examining changes in burnout and resilience in the workforce over time (second round data collection to occur February 2019). Additionally, regression modeling will be used to examine individual injury/sick days, employee satisfaction, employee turnover, nurse-physician collaboration measures, and patient satisfaction scores to changes in burnout and resilience scores.

Results: 1,849 nurses completed first round data collection. While scores demonstrated average emotional exhaustion (M= 19.48, SD 11.74) and resilience (M= 32.52, SD 5.39), we provided unique hospital and unit level reports to each facility to demonstrate units experiencing high emotional exhaustion, high depersonalization, or low personal accomplishment scores. These results help inform grassroots evidence-based initiatives to improve wellbeing at a unit level.

Implications: A collaboration between the the university and healthcare system provides an exemplar of how funding, partnership, data sharing, and translational practice can help support the improvement of workforce outcomes. The first phase of data collection and reciprocal data sharing has laid the foundation for generating a workforce dataset of burnout and resilience outcomes, from which wellbeing initiatives can have evidentiary support. Through continued annual data collection and the linkage of actual clinician data, future research will generate new knowledge to the organization and profession that can be impactful for retention and wellbeing.

Funding: Funded by the Dignity Health, Norton Thoracic Institute, Arizona State University Collaborative Strategic Initiatives Program.

PROFESSIONAL, POLICY, AND WORKFORCE ISSUES

Nursing Perception of Nursing Assault and Its Impact on Caregiving: A Phenomenology Study

Janeane Walker, CPN CCRN-K
Northeast Georgia Health System
Braselton, GA

Background: According to the U.S Bureau of Labor Statistics “Homicides accounted for 10 percent of all fatal occupational injuries in the United States in 2016. There were 500 workplace homicides in 2016, an increase of 83 cases from 2015. The 2016 total was the highest since 2010.” Workplace violence is a documented problem and is widespread among health care workers (Kowalenko et al., 2012; Phillips, 2016). Patients have been the perpetrator of violent acts towards healthcare workers. In the hospital setting, health care workers have experienced assault ranging from acts of intimidation, to verbal, physical, & sexual (Baby, Glue, & Carlyle, 2014; Wyatt, 2016). Nurses spend the majority of their time with the patient and as a result is a prime target for assault by the patient (Burns, 2014).

Objective: The purpose of this phenomenology study was to explore the lived experience of nurses who were assaulted at work and explore how the experience of assault based on the nurses’ perception has impacted them personally and professionally.

Method: This study adopted a Giorgis phenomenological approach. In this study, 14 registered nurses and 2 licensed practical nurses participated. Data were collected using in depth one on one interviews. All interviews were audio recorded and transcribed verbatim by the researcher.

Results: The nurse participants shared their stories of verbal, physical and sexual assault while at work. Based on the study results, themes of being violated, maintaining professionalism, being cautious, compassion fatigue, and strategies of protection were determined. Participants reported how they were surprised of the frequency of assaults they have experienced in their career. They denied any impact that the assault(s) had on their ability to deliver professional nursing care to their patients after an assault but described how the assault(s) had impacted them personally.

Implications: The stories of the nurses lived experience sheds light on the importance of continued education about assault for both staff and the public. Policy development for the protection of staff is vital.

Discussion: The aftermath of assault have left the nurses mentally taxed, emotionally drained and physically harmed resulting in either nurses leaving the bedside or not being content in their current role as a nurse. These findings lead to a deeper understanding of how nurses have experienced assault and brings awareness on how nurses are personally affected yet continue to deliver professional nursing care.

PROFESSIONAL, POLICY, AND WORKFORCE ISSUES

Time to Evacuate! Do You Know Where to Go?

*Blaine A. Winters, DNP, ACNP-BC
Associate Teaching Professor
Brigham Young University
College of Nursing
Provo, UT*

*Audrey Simpson, BSN, RN
Master's Degree Student
Brigham Young University
College of Nursing
Provo, UT*

Purpose/Aim: The purpose of this presentation is to identify general criteria for choosing evacuation sites for long-term care facilities (LTCs) residents following a disaster.

Rationale/Background: Disasters are an increased concern globally. They are unpredictable and leave people with little time to prepare. LTCs must have plans in place for the safety and care of their residents in the event of a disaster. This requires an evacuation plan. Current literature lacks practical information pertaining to selecting appropriate evacuation sites and factors to consider when choosing sites.

Project Description: A literature search was conducted to identify what was known in relation to evaluating and choosing evacuation sites for LTC facilities. The following databases were searched: Medline, CINAHL, PsycArticles, and PsycInfo. Search terms included disaster, elderly, long-term care facility, drills, resilience, disaster education, and disaster preparedness. 60 articles were identified relating to facility disaster preparedness, and 10 articles addressing evacuation site selection. Factors to consider when choosing an evacuation site were based on challenges identified in the literature by LTCs during actual evacuations.

Outcome: A checklist was created to assist LTCs choose an appropriate evacuation site. Major categories on the checklist included resident nursing care, staff concerns, structural concerns, and security. These major categories were further delineated into areas such as sleep accommodations, options for meal preparation, medical/nursing needs, sanitation, needs for electricity, and resident, staff, and family safety.

Conclusion: Use of the evacuation site checklist will ensure that LTCs are better prepared in the event of a disaster in which they need to evacuate. In the future, research needs to be done in addressing the evacuation needs of specific LTC patient groups such as those who are ventilator dependent or have significant infections or communicable diseases.

PROFESSIONAL, POLICY, AND WORKFORCE ISSUES

Translating Nursing Research to Practice Using an Environmental Justice Framework

*Sarah Brown Blake, RN, PhD, PHN
Assistant Professor
School of Nursing
California State University, Chico
Chico, CA*

Purpose: The purpose of this paper was to describe the association between arsenic in drinking water and the prevalence of gestational diabetes in the San Joaquin Valley using the Translational Environmental Research in Rural Areas (TERRA) framework as it relates to nursing practice and environmental policy.

Description of Concept: Butterfield & Postma's TERRA framework provides an approach to exploring environmental health (EH) hazards and environmental risk reduction (ERR) strategies as they relate spatially, economically, and culturally to rural communities. The framework applies to rural residents as well as environmental hazards specific to geographic location and can ultimately guide public health policy and practice recommendations by providing a way to conceptualize successful family and community-centered nursing interventions. TERRA also enables nursing research to further expand nursing health promotion with an essential, and often overlooked, environmental justice lens.

Approach and Rationale: Drinking water is a major concern in the San Joaquin Valley, where arsenic leaches naturally into groundwater and can contaminate community water systems at levels above the United States (US) Environmental Protection Agency's (EPA) maximum contaminate limit (MCL) of 10ppb. Inorganic arsenic is a known carcinogen and the literature supports a diabetogenic effect. Municipal and private drinking water sources in the San Joaquin Valley are known to include areas with arsenic levels significantly above the MCL. Communities in these areas are particularly vulnerable to drinking water contamination due to geographic location, socio-economic status, poor infrastructure, and rurality. The results of a cross-sectional study on arsenic levels in drinking water and prevalence of gestational diabetes in women residing in the San Joaquin Valley from 2010-2013 are used to explore and test this framework.

Conclusions: Implications for nursing practice are discussed within the context of the TERRA framework. A positive association between arsenic in drinking water and prevalence of gestational diabetes is described. California state policy and nursing practice recommendations for pregnant women living in predominantly rural and disadvantaged communities who rely on private and poorly managed community water systems is presented within the framework's model. Further nursing research related to arsenic, environmental health disparities, and risks to populations based on geographic location, specifically rural areas, is strongly indicated. In addition, further development of the framework to conceptualize specific populations, contaminants, and the socio-cultural and political complexities of vulnerable populations is warranted.

Abstracts of Poster Presentations

RESEARCH METHODS

RESEARCH METHODS

Developmental Stages of Organizational Learning: Instrument Development

Kalene Ethington, BS, RN, CCRN
Bret Lyman, PhD, RN, Assistant Professor
Margaret Gunn, Baccalaureate Nursing Student
College of Nursing
Brigham Young University
Provo, UT

Purposes/Aims: To test the reliability and validity of a newly developed instrument designed to measure developmental stages related to organizational learning in hospital units.

Rationale/Conceptual Basis/Background: In hospitals, an estimated 400,000 deaths per year are caused by preventable harm. Organizational learning offers some hope as a means for achieving desired outcomes in hospitals. Organizational learning is “a process of positive change in the collective knowledge, cognition, and actions within an organization, which enhances the organization’s ability to achieve its desired outcomes”. Previous research has identified four distinct developmental stages associated with organizational learning in high-performing hospital units, including: identity and ownership, team and respect, accountability and support, and reliability and sustainability. Measuring this developmental progression in hospital units is an important step toward facilitating organizational learning. However, existing instruments designed for measuring organizational learning are inadequate. In response to this need, we drew upon two qualitative studies to design a research instrument specifically intended to measure developmental stages associated with organizational learning in hospital units.

Methods: A total of 35 items were generated using a bottom-up strategy, drawing on the results of two qualitative studies of organizational learning in high-performing hospital units. Item-level and instrument-level content validity were assessed and strengthened using both a bottom-up strategy, involving three cycles of cognitive interviewing with 28 nurses, and a top-down strategy in which eight experts rated the instrument’s content validity. Information about the hospital units’ developmental progression related to organizational learning is currently being gathered via a web-based survey administered to nurses on inpatient units in Magnet® hospitals. Construct validity will be tested using multi-level confirmatory factor analysis, with the hospital unit as the unit of analysis. Prior simulations indicate a 95% chance of achieving convergence with a sample size of 100 hospital units. Predictive validity (testing hypothesized relationships between organizational learning and selected clinical outcomes) will be tested using multi-level multiple linear regression. Based on a power analysis for multiple linear regression, reaching 80% power, with a medium effect size of 0.15, an alpha of 0.05, and six predictor variables, the target sample size of 100 hospital units is anticipated to be adequate. Reliability will be tested using within-level and between-level composite reliability scores.

Results: The scale-level content validity for this instrument was 0.95 and item-level content validity index scores ranged from 0.86 to 1.0, suggesting excellent content validity for the items individually and the instrument overall. Data collection is currently underway. Additional findings are pending.

Implications for Translation to Practice/Further Research: It is anticipated this instrument will make it possible to conduct rigorous organizational learning research, and will be a valuable resource clinical leaders can use to guide internal quality improvement initiatives.

Funding: This project was funded by the Brigham Young University College of Nursing.

RESEARCH METHODS

Contextual Factors of Organizational Learning: Instrument Development

Bret Lyman, PhD, RN, Assistant Professor
Emily Hammond, Baccalaureate Nursing Student
Kylie Thorum, Baccalaureate Nursing Student
College of Nursing
Brigham Young University
Provo, UT

Purposes/Aims: To test the reliability and validity of a newly developed instrument designed to measure contextual factors associated with organizational learning in hospital units.

Rationale/Conceptual Basis/Background: Organizational learning may play an important role in improving quality and safety in healthcare. Organizational learning is “a process of positive change in the collective knowledge, cognition, and actions within an organization, which enhances the organization’s ability to achieve its desired outcomes”. In hospitals, organizational learning has been linked to improved clinical outcomes, financial outcomes, empowered staff, a healthier workplace culture, increased staff satisfaction, and organizational commitment. A recent realist review of the literature on organizational learning in hospitals revealed six contextual factors associated with organizational learning: a shared purpose, motivation, psychologically safe relationships, infrastructure, leadership, and experience. Developing a means for measuring these contextual factors is an important step toward designing and testing interventions to foster organizational learning.

Methods: Drawing from a realist review on organizational learning in hospitals, a top-down strategy was used to generate 41 items measuring the contextual factors related to organizational learning. Cognitive interviewing and expert reviews were used to assess and strengthen the instrument’s item-level and instrument-level content validity. Twenty-nine nurses participated in three cycles of cognitive interviewing and eight experts rated the instrument’s content validity. Currently, the web-based instrument is being distributed to nurses on inpatient units in Magnet® hospitals. These nurses are using the instrument to rate the degree to which the six contextual factors are present on their hospital unit. Construct validity will be tested using multi-level confirmatory factor analysis, with the hospital unit as the unit of analysis. Statistical simulations by Maas & Hox indicate a 95% chance of achieving convergence with a sample size of 100 hospital units. The instrument’s predictive validity will be tested using multi-level multiple linear regression (with unit-level measures of clinical outcomes and patient experience as the dependent variables). Based on a power analysis for multiple linear regression, 100 hospital units should be adequate to reach 80% power, with a medium effect size of 0.15, an alpha of 0.05, and six predictor variables. Reliability will be tested using within-level and between-level composite reliability scores.

Results: For this instrument, the item-level content validity index scores ranged from 0.75 to 1.0 and the S-CVI was 0.927, suggesting acceptable content validity for the individual items and excellent content validity for the instrument overall. Data collection is currently underway. Additional findings are pending.

Implications for Translation to Practice/Further Research: It is anticipated this instrument will allow researchers to conduct hypothesis-driven studies on contextual factors associated with organizational learning, including interventional research. For clinical leaders, this instrument may be useful for conducting needs assessments and evaluating organizational initiatives designed to foster organizational learning and improve performance.

Funding: Funding provided through the Dr. Elaine D. Dyer Research Endowment.

RESEARCH METHODS

Challenges in Recruitment of Filipino American Parents in Autism Study

Sharee B. Anzaldo, MS, RN, PHN, CPN
Doctoral Candidate
School of Nursing
University of California, Los Angeles
Los Angeles, CA

Felicia Schanche Hodge, DrPH, MPH
Professor
Schools of Nursing and Public Health
University of California, Los Angeles
Los Angeles, CA

Purpose: Autism spectrum disorder (ASD) strikes 1 out of 59 children in the United States. This developmental disability impacts behavioral, social, and communication patterns. Due to increased awareness, improved screening and diagnostic tools, and eligibility for special education, the prevalence of ASD has increased over several decades. Cultural beliefs and perceptions, particularly in vulnerable populations, impact the means in which parents manage care and seek treatment for their child with ASD. This study identifies and addresses the challenges faced in recruitment of Filipino Americans in qualitative research about parental beliefs and perceptions about managing care for a child with ASD.

Rationale: Studies in vulnerable populations and underrepresented groups require researchers to instill cultural sensitivity in recruitment strategies. Cultural beliefs and values are salient aspects to consider in the design of research protocol. Stigma and shame about ASD are prevalent in Filipino American culture, which negatively impacts health care outcomes through delay in seeking early intervention for the child, as well as underreporting of the developmental disability. Recruitment strategies in Filipino Americans involve a strong knowledge base about Filipino culture and history, as well as ASD services and resources.

Methods: Development of recruitment strategies for ASD in the Filipino American population was centered on various components—cultural values, historical context, ASD services and resources, and Filipino community groups and organizations. The cultural value of *kapwa* (togetherness) was integrated into recruitment strategies through instilling collectivism in reaching out to potential research participants in social or group settings, such as community and church groups or ASD support groups. Filipino history also influenced recruitment strategies through understanding the impact of colonization patterns in help-seeking behaviors and cultural mistrust.

Results: Two main challenges emerged during the recruitment process: (1) identifying specific individuals and groups working closely with Filipino American children diagnosed with ASD; and (2) devising appropriate means of disseminating study information to potential eligible participants. Several strategies were implemented to address such challenges: (1) compiling a comprehensive list of Filipino American community organizations, church groups, and pediatric and behavioral health care providers caring for Filipino American children with ASD, autism centers and organizations, and regional centers with access to Filipino American clients; (2) utilizing a gatekeeper from the various organizations, centers, and groups to disseminate study information to potential eligible participants; (3) establishing rapport and trust with potential research participants; and (4) communicating study aims and contribution to knowledge base about Filipino Americans and ASD in an effective manner.

Implications: Culturally tailored recruitment strategies for enrollment of Filipino Americans in an autism study involves implementation of a comprehensive, yet sensitive method to address the unique challenges that researchers may encounter, such as cultural mistrust. Traditional recruitment strategies do not consider culture and history as components that influence the decision-making process of the potential participant to enroll in research studies. Nurse researchers must understand the complexities that may arise during the recruitment process that are rooted in cultural beliefs and perceptions about stigmatized conditions.

Funding: NIH/NINR T32 NR007007 Vulnerable Populations/Health Disparities; Sigma Theta Tau International Honor Society of Nursing Gamma Tau-at-Large Chapter Research Grant; Society of Pediatric Nurses Research Grant; Jonas Nurse Leaders Scholar Program; UCLA Institute of American Cultures Research Grant.

RESEARCH METHODS

Incorporating Photovoice in Qualitative Research: Lessons Learned

*Lauren A. Acosta, MS, RN
PhD Candidate
College of Nursing
University of Arizona
Tucson, AZ*

*Marylyn M McEwen, PhD, RN, FAAN, Faculty Mentor
Professor, Sorensen Endowed Professor for Diabetes Research & Education
College of Nursing
University of Arizona
Tucson, AZ*

Purpose/Aims: To examine the utility of incorporating Photovoice into a critical ethnography to contextualize post-rape decision making and help-seeking behaviors within the recovery process of undocumented women who have survived rape.

Rationale/Conceptual Basis/Background: Rape is a highly gendered phenomenon, women bear the greatest health burden and women that face unique social traumas, such as undocumented immigrant women, may suffer disproportionately due to their vulnerable and marginalized status. While there is a need to understand the cultural and socio-political context of post-rape decision-making and help-seeking behaviors among these women it is also important for them to feel like equal participants in the research process. Photovoice is a method that engages participants as equal partners.

Methods: Three key informants engaged in Photovoice, by using a tablet computer to take pictures of three themes related to post-rape decision-making, help-seeking, and recovery. The researcher and individual key informants then engaged in a collaborative examination of the photographs, which was documented via notes and/or audio recorded and transcribed. Themes emerge following a process of qualitative content analysis of the transcript and further visual analysis of the photos. Key informant recruitment is still in progress.

Results: The photographs became useful sensory artifacts, revealing that barriers to help seeking are abstract and difficult to pinpoint. Three themes emerged from triangulation of the photos and the collaborative examination as important facilitators to help seeking and recovery post-rape; 1) family, 2) strength given from a higher power, and 3) inner light.

Implications: Despite its usefulness, the application of Photovoice in this study was challenging. Due to the abstract nature of this data collection method, it might be more appropriate for key informants with at least a high school education. Additionally, limiting photography to a single theme to reduce confusion and increase conceptual clarity is also recommended.

RESEARCH METHODS

Small Grant Funding Supports Translation of Nursing Research Findings into Practice

Gretchen J. Summer-Gafford, PhD, RN
Director & Research Scientists
Kaiser Permanente (KP) Northern California
Nursing Research Community Benefit Program
Patient Care Services Regional Offices
Oakland, CA

Purpose/Aims: The purpose of this project was to provide financial support for a multidisciplinary preconference. The preconference goal was to develop a position statement or guidelines to change healthcare policy and nursing care of women admitted to the emergency department (ED) with an unexpected pregnancy loss.

Rationale/Background: Funding to support the translation of nursing research findings into practice is critically needed. While the lack of emotional support provided to women with pregnancy loss is well established, guidelines describing such support and how to provide it are not. Regrettably, one in four pregnancies do not result in a healthy newborn. Miscarriage, ectopic pregnancies or in utero fetal demise occur. Depending on the gestational age and other factors, the most common place these women seek care is the ED. However, EDs are medical treatment facilities specializing in acute care—patients are triaged with care provided where it is most urgently needed. As they are often physiologically stable, women who have lost a pregnancy and their concerned family members usually wait a long time to be assessed.

Methods: A nursing research community benefit program whose mission is to advance healthcare knowledge was contacted and agreed to provide financial support for those travelling to a multidisciplinary preconference facilitated by a nurse scientist in collaboration with the National Perinatal Association (NPA).

Outcomes: In 2016, approximately seven thousand dollars (\$7,000) in grant funding was provided by Kaiser Permanente Northern California Nursing Research Community Benefit Program to participating multidisciplinary experts in travel reimbursements of up to \$500 each. A total of 32 pregnancy loss and emergency medicine experts from professional and lay organizations attended the preconference, facilitated by the nurse scientist whose program of research provided a foundation for discussion. They reviewed data, law, professional standards, and heard testimonials from women admitted to the ED who had lost pregnancies. The group concurred that a set of guidelines were needed and agreed to take part in a subsequent Delphi Study to craft guideline language, resulting in the publication of *Interdisciplinary Guidelines for Care of Women Presenting to the Emergency Department with Pregnancy Loss* (Catlin, 2017). The American Nurses Association Ethics Board endorsed the guidelines in 2018.

Implications for Translation to Practice/Further Research: The current case is an example of how a small grant helped a nurse scientist to translate findings from her program of research into practice. The guidelines can be found on the NPA home page web site at <http://www.nationalperinatal.org/position>. They have also been published by the *Children's Project on Palliative/Hospice Service CHIPPS-e Journal* at <https://www.nhpco.org/chipps-e-journal>. The story of how the guidelines were created was published in the *Journal of Perinatology* (Catlin, 2018) and can be used as a model to benefit future patients and caregivers. Future research is needed to focus on supporting translation of the guidelines into practice.

RESEARCH METHODS

CHANT: Climate, Health and Nursing Tool Development

*Beth Schenk, PhD, MHI, RN-BC
Providence St. Patrick Hospital
Washington State University
College of Nursing
Missoula, MT*

*Shanda Demorest, DNP, RN-BC, PHN
University of Minnesota
School of Nursing
Minneapolis, MN*

*Cara Cook, MS, RN, AHN-BC
Alliance of Nurses for Healthy
Environments
Baltimore, MD*

*Ekaterina Burduli, PhD
Washington State University
College of Nursing
Spokane, WA*

Purpose/Aims: The purpose of this study was to develop and test a novel instrument to measure nurses' awareness, motivation, and behaviors related to climate change and health.

Rationale/Background: Climate change has been described as the world's greatest public health crisis. The 2018 report from the Intergovernmental Panel on Climate Change highlighted the adverse health, social, and planetary impacts of global warming of more than 1.5 degrees centigrade, thus emphasizing the urgency of reducing fossil fuel use dramatically by 2030. Furthermore, the healthcare industry simultaneously contributes to fossil fuel use and is a haven for humans whose health has been harmed by climate change. Nurses, as the largest clinical group in the nation, and the most trusted profession, are in key positions to address the health impacts of climate change, including advocating for policies that protect human health. Yet, little is known what nurses understand about the impact of climate change on health. No tool currently exists to measure nurses' awareness, motivation, and behaviors related to climate change and health.

Methods: After an extensive literature review, we developed 64 draft items for the Climate, Health, and Nursing tool (CHANT). We then interviewed 12 content experts from across the nation to refine and prioritize the draft items. We tested the refined draft items in a nationwide convenience sample of n=350 nurses (>80% with BSN degree or higher) using survey software to collect on-line responses. The study was deemed exempt by our university IRB.

Results: Normality of item distributions will be assessed and means and standard deviations will be calculated for subscale and total scores. An Exploratory Factor Analysis using Maximum Likelihood estimation with an oblique rotation will be performed on the scale items to assess factor structure and Cronbach's α will be calculated to estimate internal consistency.

Implications: Having a psychometrically sound tool to measure nurses' awareness, motivation and behaviors related to climate change and health will allow investigators to track changes over time. By gauging levels of awareness and action, nursing leaders can help to prioritize research, education, advocacy, and practice needs to ensure the profession is prepared to address the global challenge of climate change.

Abstracts of Poster Presentations

**SIMULATION, IPE, AND CLINICAL
EDUCATION**

SIMULATION, IPE, AND CLINICAL EDUCATION

Perceived Barriers among Chinese Nurse Educators in Simulation Implementation

Kaye Wilson-Anderson, DNS, RN
Associate Professor
School of Nursing
The University of Portland
Portland, OR

Yu Liu, PhD
Professor
School of Nursing
China Medical University
Shenyang, Liaoning Province, China

Xiaohan Li, PhD
Dean
School of Nursing
China Medical University
Shenyang, Liaoning Province, China

Michelle Collazo, MS, RN
Simulation Development and Content Manager
University of Portland
Portland, OR

Chris Blackhurst, MS, RN, CNL
Director of the Simulated Health Center
University of Portland
Portland, OR

Stephanie Meyer, MSN, RN
Simulation Operations Manager
University of Portland
Portland, OR

Aim: The goal of this research study was to examine the knowledge and identify the perceived barriers for Chinese nurse educators regarding the initial development and implementation of simulation-based learning experiences in nursing education.

Background: Nurse educators in China are slowly gaining an understanding of the use of simulation in education, as well as gaining knowledge of simulation development and implementation. The primary investigator, an American nurse educator, two Chinese nurse educators and three additional American nurse educators collaborated to design this study. Evidence in nursing education literature demonstrates encouraging findings related to the use of simulation in Chinese nursing schools, such as significant student satisfaction with the use of moderate- to high-fidelity simulation, improved clinical performance, and enhancement of self-confidence and ability to care. Following the research teams' literature review, however, it was recognized that research evaluating Chinese nurse educators' knowledge and understanding of simulation implementation and possible perceived barriers was needed. Thus, this research team designed and implemented this study.

Method: Following IRB approval from the American faculties' affiliated university and three Chinese affiliated universities, a descriptive quantitative design was implemented. The primary investigator traveled to China and delivered an "overview of simulation" workshop to both didactic and clinical nurse educators, focusing on simulation scenario development and the implementation process. Upon consent, data was collected from both groups utilizing established measurement tools that were adapted with the author's consent. Tools measured faculty knowledge of simulation and perceived barriers to simulation implementation.

Results: The results will be collected during the Fall of 2018 and analyzed November through February 2019. Results will be available for dissemination at the WIN conference.

Implications: Results of this study will be utilized to guide the ongoing work of this research team in developing and implementing simulation methodology in Chinese healthcare education. The primary investigator will be returning in the Spring of 2019 to assist Chinese team members in implementing a follow-up study that will focus on exploring the perceptions of both Chinese nurse educators and students involved in simulation implementation.

Funding: Misener Grant, University of Portland School of Nursing; Omicron Epsilon Grant, University of Portland Chapter of Sigma Theta Tau

SIMULATION, IPE, AND CLINICAL EDUCATION

From Failure Comes Success: A Rapid Repetition and Redirection Simulation Approach

*Jennifer Serratos, RN, MSN
Full Time Faculty, School of Nursing
California State University, Stanislaus
Turlock, CA*

Purpose: The purpose of this innovation was to introduce a new simulation procedure named Rapid Repetition and Redirection, in order to reduce students fear, improve their simulation experience, and increase their knowledge.

Background: Simulation with debriefing is a growing teaching methodology often used in Schools of Nursing. Nursing programs vary in their use of simulation environments, with some being low stakes and others high. Low stakes tend to focus on learning as the only objective, where high stakes also includes a graded component. There is no single simulation or debrief standard that has been adopted for nursing education.

Methods: This innovation for simulation was introduced during the third semester of a six semester Bachelor's Degree program, in their Reproductive Health course. Students had been exposed to traditional methods of simulation previously. Groups of 5 students entered the high fidelity laboratory and were tasked with caring for a standardized patient actor experiencing a postpartum hemorrhage. Students were prepared with didactic content in the weeks before the simulation. Students were expected to work as a team and were given specific guidelines for care. The simulation was specifically complex, resulting in a maternal death. Students are rarely able to prevent the deterioration on their first attempt. A debrief session occurred immediately following the simulation, which included what went well, what did not go well, and what they should do differently in the future. Students are returned to the laboratory immediately after the debrief and repeat the simulation experience. During this second experience, the faculty provides redirection as needed in order for the students to emerge having saved the life of the woman. A final debrief occurs thereafter.

Outcome: Anonymous student evaluations reflected the success of the simulation strategy. Students expressed that this simulation experience left them feeling empowered, having left the experience on a positive note. They reported that although they made mistakes, they also did many things right. Having their confidence improved was noted by many. Students reported being fearful when they entered the simulation, based on their previously negative simulation experiences. However, they reported not being afraid of simulation after this experience. Faculty reports that the students are more engaged with didactic and clinical content after their success in simulation.

Implications: Students are often obsessed with grades and their own high performance expectations. Although this simulation experience is not graded, students were not satisfied when they leave the experience having failed. Using a Rapid Repetition and Redirection simulation strategy, students completed the experience with success, which in turn improved their overall confidence and positive perceptions of their skills, knowledge, and attitudes.

SIMULATION, IPE, AND CLINICAL EDUCATION

Theater Students in NP Education: Connecting Careers and Community Needs

Marylou V. Robinson, PhD, FNP-C, Associate Professor of Nursing
Lorena C. Guerero, PhD, Associate Professor of Nursing
Kathleen Richardson, DNP, FNP, ENP, FAEN, Director, FNP Program
School of Nursing
Pacific Lutheran University
Tacoma, WA

Aim: Small liberal arts based schools have a challenge when accessing standardized patient resources for interactive simulations and OSCE evaluations (Objective Standardized Clinical Evaluations). Cost and distance from larger urban settings are just a few of the factors impeding the use medical school based programs. The project aim was to develop a sustainable OSCE program for the Family (FNP) and Psychiatric Mental Health Nurse Practitioner (PMHNP) programs with the funding provided by The Advanced Nursing Education Workforce (ANEW) Program HRSA-17-067.

Background: OSCE evaluations enable faculty to have a uniform method of establishing student progress. This reduces potential bias with short on-site evaluations within clinical sites. It reinforces that faculty, not preceptors, determine grades. This school turned to the Theater Department to pilot a project using theater volunteers. Intensive workshops by regional and Canadian simulation experts facilitated development of an unfolding case study for the FNP program. A national Psychiatric Mental Health expert provided clarity for training theater students to provide realistic portrayal of patients for PMHNP students. **Process:** Orientation of students to the concept of OSCE started with formative sessions with summative sessions in the second pilot year. Every student in the same level of coursework in the FNP program, entered a realistic clinical setting, had a 15 minute encounter with an interactive theater patient and then produced a clinical visit note including return visit considerations. The same case was used for all students on the same level. The next semester had a return visit scenario with development of care complications. Classroom simulation of mental health patients requiring interaction between student groups were found to be very helpful in preparing them for a simulated 1:1 hour long intake interview for the PMHNP student OSCE.

Outcomes: Surveys and interviews for both nursing and theater students demonstrated a significant positive impact on self-confidence in clinical preparation. The second encounter with the same patient provided a rare opportunity to actually see a repeat visit, something constrained by rotating students between clinical sites. Theater students were thrilled to be contributing to the health care needs of their community. Theater Department faculty were eager to expand their contribution and thereby increase the opportunities and variety of acting experiences for actor resumes. Formal establishment of a credit bearing course designed specifically to support the School of Nursing will also provide standardized grading rubrics for actor performance and accountability that will be monitored by the Theater Department. It will also address the sustainability question of supporting the program after ANEW GRANT funding expires.

Conclusions: Both primary care and psychiatric mental health practitioner students benefitted. Theater faculty were eager to expand formal recognition of newly developed skill sets for theater students. Nursing faculty have developed evidence of quality improvement program geared toward student success and consistent achievement of accreditation standards. Successful interdisciplinary projects that benefit both departments can be done with limited resources. Continued program evaluation is planned to increase the size and impact of this practice.

SIMULATION, IPE, AND CLINICAL EDUCATION

Virtual Clinical Supervision for Senior Nursing Preceptorship: A Feasibility Pilot

Mary F. O'Connell, MA, PHN, RN
Senior Lecturer

Cheryl Lacasse, PhD, RN, AOCNS
Clinical Professor

The University of Arizona
College of Nursing
Tucson, AZ

Purposes/Aims: Weekly clinical supervision throughout the senior clinical preceptor experience in a baccalaureate nursing education program is key in providing formative feedback for students preparing to enter the profession. The purpose of piloting “virtual clinical visits” during the preceptorship was to determine the feasibility of using video conferencing technology for supervision and to explore the impact of collaborating with senior nursing students and their preceptors on the night shift in choosing a convenient time for a supervision visit with clinical faculty.

Rationale/Background: Within the final semester of a Baccalaureate nursing (BSN) program preceptorship, students are placed with a clinical preceptor for five weeks and work three 12 hour shifts per week. Throughout the preceptorship, students are typically supervised weekly by their clinical faculty. Recently, increased numbers of BSN nursing students are being placed on night shifts for their preceptorship. Clinical supervision during the night shift creates many challenges for faculty who are responsible for students on both day and night shifts in addition to other faculty responsibilities during the daytime. Additionally, faculty received requests from students and preceptors to have more control over choosing a convenient time during the shift for a clinical faculty supervision visit.

Brief Description of Project Approach: The pilot began in January 2018 after approval of the Division Director. A letter describing the pilot was sent to all clinical coordinators, managers, and preceptors at clinical sites providing student preceptorship experiences. The virtual clinical visit option was offered to triads of student, preceptor and faculty who agreed to use a mobile platform on the student’s mobile device. Prior to beginning their preceptorship, students and clinical faculty tested the function of video conferencing software to ensure familiarity with the designated platform prior to beginning their preceptorship. All virtual meetings between faculty, students, and preceptors were conducted in a quiet, private area outside of patient care settings via Zoom or Facetime which are both secure and encrypted platforms.

Outcomes: The pilot is ongoing. Six student/ preceptor dyads have completed and evaluated a total of 12 virtual clinical supervision visits. Virtual visits were held during weeks two- and three of the five-week preceptorship. The mean meeting time was 29.83 minutes (range 27.66 – 32.33). Sixty six percent students and preceptors chose virtual meetings occurring between 10 and 11PM in week two; and 100% chose virtual meetings occurring between 11PM and 12AM in week three. Both students and preceptors noted the convenience of meeting during less busy times, the flexibility of being able to choose their meeting time, efficiency of virtual meetings, and the ease of using the virtual platform application.

Conclusions: Preliminary results suggest that conducting virtual clinical visits using Zoom or Facetime platforms during a clinical preceptorship is a feasible option for providing formative feedback. In addition, this method of clinical supervision is valued by students, preceptors, and clinical faculty. Virtual clinical supervision visits provide an efficient means of communication within a BSN preceptorship and a user-friendly method for students, preceptors and faculty to communicate.

SIMULATION, IPE, AND CLINICAL EDUCATION

Adopting a Hearing Voices Simulation for BSN Students Using Plan-Do-Study-Act Cycles

*Monika B. Eckfield, PhD, RN, PHN
Carly Studzinski, BA, BSN Candidate
Kassidy Gustafson, BSN Candidate,
Department of Nursing
California State University, East Bay
Concord, CA*

Aims: The Hearing Voices Simulation (HVS) project had three aims: Provide BSN students with an immersive mental health experience to develop empathy and therapeutic communication skills that can be used with any clients with impaired ability to concentrate, process information, or understand surroundings; Cultivate program planning, implementation, evaluation, and leadership skills in two nursing student interns; Utilize a Plan-Do-Study-Act (PDSA) quality improvement model to make incremental, sequential changes that increase efficacy and sustainability of the learning program.

Rationale: Healthcare simulations are an effective way to train students to assess and intervene in complex and challenging situations. Auditory hallucination simulations are an evidence-based strategy to improve students' empathy and their ability to personalize healthcare interventions. PDSA quality improvement cycles are a method to evaluate program effectiveness, identify areas for improvement, integrate changes and retest the program. PDSA cycles allow for rapid integration of improvements and program refinement.

Process: The HVS progressed from a pilot to a component of the Psychiatric Nursing curriculum over the course of three PDSA cycles. The first cycle was held in the 2018 Spring academic term. Two student interns and their faculty mentor conducted two 3-hour simulations involving 58 nursing students. Student participants completed program evaluations at the end of their learning experience. Evaluations were analyzed to identify factors that promoted students' learning and for programmatic improvements. Improvements were integrated before the second cycle, which was held in the 2018 Summer academic term. In this cycle, seven 3-hour simulations were conducted, involving 118 nursing students. In the 2nd cycle, a faculty facilitator guide was piloted and seven psychiatric nursing clinical faculty were trained to conduct the simulation experience. Evaluation feedback was collected from students and clinical faculty to identify further improvements to the program and the facilitator guide. The third cycle was held in the 2018 Fall academic term and incorporated new improvements to the program and facilitator guide. In this cycle, four 3-hour simulations were conducted involving 64 nursing students. One new faculty member was trained using the updated facilitator guide.

Outcomes Achieved: Program outcomes included: Nursing students consistently reported a deeper understanding of auditory hallucinations and greater empathy for those experiencing these symptoms after participating in the program. Student participants articulated specific ways in which they believed the program informed their nursing practice; The student interns gained valuable experience in program planning and evaluation, practiced group facilitation skills, and honed their organizational and professional communication skills. They identified several ways to streamline the logistics and supplies involved in producing the simulation, which improved the long-term sustainability of the program; 3) The PDSA cycles proved to be a highly effective tool for rapidly evaluating and improving the student learning experience and its accompanying facilitators guide.

Conclusions: Hearing Voices Simulation is an effective, interactive way to enhance nursing students' mental health nursing skills. Involving student interns in program development and evaluation led to unique opportunities that promoted students' professional growth. The PDSA model is a flexible, efficient way to make quality improvements in nursing simulation experiences.

SIMULATION, IPE, AND CLINICAL EDUCATION

Get on the Bus! UC Davis Interprofessional Central Valley Road Trip

*Jann L. Murray-García, MD, MPH
Victoria Ngo, PhD Candidate
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA*

Aim: To evaluate a mobile classroom that teaches complex concepts, like social determinants of health, health inequities, population health, and cultural humility, by implementing an overnight, interprofessional road trip of UC Davis Health students, faculty, administrators, staff and community members through the Great Central Valley of California.

Background: The Central Valley runs north-south for 450 miles. It produces half of the nation's fruits and vegetables. The region's distinct populations are rich in ethnic and racial diversity, religion, immigration status, and language. A Central Valley historian and public policy expert accompanied the travelers. We know of no other field trip study where the learners include a professionally diverse, multi-generational group of students, faculty, administrators, staff and community members.

Methods: The survey consisted of 7 pre-evaluation and 12 post-evaluation questions designed to understand participants' pre-trip expectations and elicit what participants took away from this experience. The survey elicited Likert scale responses, as well as open-ended questions asking about respondents' perspectives on the trip. The data was analyzed using SPSS v.24 (IBM). Descriptive statistics were calculated for questions with Likert scale responses (0-10), with 10 being the most positive rating. Associations between select variables were determined using t-tests. Statistical significance was set at $p = .05$. Thematic analysis was utilized for open-ended questions.

Outcomes Achieved: Following 3 road trips across 2017 and 2018, 112 participants total completed the evaluation survey for a response rate of 85%. Respondents were UC Davis students, faculty, administrators, staff and community members from the Schools of Nursing and Medicine. Participants believed the bus trip was useful to their health profession practice (m [mean] = 9.42, $SD = 0.93$). Respondents felt the overnight road trip experience aligned well to each of the goals of the 2017-2020 UC Davis Health System Strategic Plan. The trip rated highest for its alignment with the goals: To "Reimagine Education" ($m = 9.69$, $SD = 0.65$), and "Transform Our [Institutional] Culture" ($m = 9.62$, $SD = 0.68$). Using a paired sample t-test, there is a significant difference in the ratings of familiarity with the Central Valley before attending the bus trip ($m = 4.98$, $SD = 2.53$) and following the bus trip ($m = 7.46$, $SD = 1.70$); $t(75) = 7.39$, $p = 0.05$. Themes from open-ended questions included: the road trip gave participants (1) a deeper understanding of the Central Valley, especially through personal stories, (2) an enhanced connection with patients and students served from this region, and (3) a sense of renewed inspiration for their roles at UC Davis Health.

Conclusion: Findings can inform nurse educators in innovating approaches to active learning including extended intergenerational, interprofessional, mobile classrooms to appreciate the contributions, sociohistorical complexities, and challenges of the geographic regions wherein their students and patients live.

SIMULATION, IPE, AND CLINICAL EDUCATION

Emergent Intraprofessional Education

Peggy Jenkins, PhD, RN
Assistant Professor/Specialty Director
College of Nursing
University of Colorado
Aurora, CO

Jacqueline Jones, PhD, RN, FAAN
Professor
College of Nursing
University of Colorado
Aurora, CO

Glenda Robertson, MA, RN
Manager Instructional Design
College of Nursing
University of Colorado
Aurora, CO

Purpose: The purpose of the pilot study is to evaluate if innovative intraprofessional education contributes to change in student perceptions of PhD and DNP unique scholarly project work, collaboration, and role definition. In addition, the process of doctoral student development toward scholarly contribution is evaluated.

Background: Doctoral students in our college of nursing are challenging assumptions, respecting perspectives, and co-creating a new model of intraprofessional (joint PhD and DNP) nursing education collaboration. An AACN taskforce defined existing doctoral degrees, PhD and DNP, as each generating new knowledge. Subsequently, national discourse is confusing and role boundaries for doctoral scholarship muddied. We are conducting a pilot study in which PhD and DNP health system students study together to explore and simultaneously craft doctoral student knowledge-in-action.

Methods: A mixed methods design including quantitative pre-post survey and multiple qualitative methods is used. IRB exempt approval was obtained. *Quantitative:* Fifteen PhD and DNP students consented to participate in surveys before and after intraprofessional doctoral education experience. Quantitative survey includes 22 questions describing scholarly activities completed by either DNP or PhD leaders. Survey is given to students during the first and last week of the fall, 2018 pilot semester. Doctoral faculty took survey for content validity and 80% agreement was reached on only 5 items. This validated role confusion. Student responses will be analyzed using counts, percentages, descriptive statistics, and test of difference with significance level .05. *Qualitative:* A focus group of fifteen PhD and DNP students explored semi-structured questions related to scholarly role boundaries. Focus group was recorded and transcribed verbatim. In addition, recorded synchronized and asynchronous naturalistic classroom discussion was transcribed verbatim. Qualitative, gestalt analysis was used to reconstruct PhD seminar to accommodate DNP learning needs. Further qualitative inductive and deductive thematic micro analysis of texts will explore “How can the unique contributions of DNP and PhD students be synergized to work together?” “How do we best prepare doctoral nursing students for DNP or PhD scholarly knowledge development?”

Results: Developing and testing “epistemological conceptual foundations” through to “small tests of change, scalability and sustainability in the real world” characterized the continuum of PhD thinking to DNP action in the focus group. Questions of concern for PhD students included “What’s going on here?” compared with DNP student emphasis on “How is that going to work here?” Student generated examples of how DNP and PhD students can pursue pressing health systems leadership questions in partnership will be illustrated in this presentation.

Implications: We will highlight how thinking and scholarship is enhanced when intraprofessional doctoral education uses action learning principles within a formation of scholar’s pedagogy.

SIMULATION, IPE, AND CLINICAL EDUCATION

Integration of Community Health Concepts in BSN Curriculum with an IPE Focus

Lisa Jaurigue, PhD, RN, CNE
Clinical Assistant Professor

Kathleen Fries, PhD, RN, CNE
Director, Pre-Licensure BSN Program

Ana Murphy, MSN, RN
Clinical Assistant Professor

College of Nursing and Health Innovation
Arizona State University
Phoenix, AZ

Purposes/Aims: To provide a model or suggested integration of community health curriculum in a concept based BSN program. Integration to include an Interprofessional Education (IPE) focus and threading of an assessment framework.

Rationale/Background: With some health care moving from the inpatient setting to the community setting, nurses need to have a strong education in community health concepts. Instead of one course providing community health content, threading of community health content within a variety of ways such as clinicals, didactic, simulation, and seminars within various courses is needed. This will allow students to cultivate a community health mindset with a strong focus on health, wellness, and prevention. An intentional integration program with the use of a model and/or concept map is needed to present content in alignment with The Essentials of Baccalaureate Education and keep faculty and courses on track with scaffolding/spiraling of essential content.

Undertaking: Development of a model or suggestion integration plan of community health curriculum. Included in the community health integration model is a common assessment framework (Gordon's Functional Health Patterns) and Interprofessional Education concepts.

Methods: Concept map creation, Integration of community health concepts, Integration of IPE principles/ideas, application of Gordon's Functional Health Patterns from individuals, families, communities, and systems.

Process: Analysis of literature, The Essentials of Baccalaureate Education, IPE concepts, and community health content; culminating in a model/suggested integration plan.

Outcomes Achieved/Documented: A model of community health integration will be presented to allow others to use or adapt to their curriculum. A suggestion of how to apply the model across nursing levels/terms/semesters will also be presented in a concept map format.

Conclusion for Educational Practice: This will allow for other educators to use the model and concept map as a means of teaching community health concepts. This may also help in teaching/assessing or enhancing the meeting of the Essentials of Baccalaureate Education for accreditation purposes.

Conclusion for Research/Future Undertakings: This foundational work can provide opportunities for programs to measure the attainment of community concepts, IPE principles, and Baccalaureate Essentials in their BSN program of study.

SIMULATION, IPE, AND CLINICAL EDUCATION

Impact of Early Maternal/Newborn Clinical Practice on First Semester Nursing Students

Denise Reeves, MS, RNC-MNN, Clinical Instructor
Connie Madden, PhD, RN, Associate Professor (Clinical)
Cheryl Armstrong, DNP, RN, Assistant Professor (Clinical)
College of Nursing
University of Utah
Salt Lake City, UT

Purposes: Our purpose is to introduce all first semester nursing students to clinical practice in a hospital setting caring for a generally healthy and demographically diverse population. Our objectives are to investigate the impact of early clinical experience in a baccalaureate nursing program by evaluating students' perceptions of their preparation, competence, and confidence at the completion of their first semester clinical experience in maternal/newborn settings. We also aim to determine the sustained effect of early clinical experience on nursing students' self-confidence with clinical learning experiences in their second semester.

Background: In 2015, the College of Nursing transformed its pre-licensure baccalaureate curriculum from a traditional content-based model to a concept-based model. The challenge was how to engage students in clinical care early in the program, prior to the completion of necessary theory, content, and assessment courses. We met this challenge by selecting a framework of concepts with appropriately leveled learning outcomes that accommodated the novice learner. Students learned necessary psychomotor skills in lab and simulation prior to attending clinical to ensure they were prepared for the experience. Curriculum changes made it possible for students to begin a precepted, hands-on clinical experience during their first semester, utilizing maternal/newborn settings as clinical practice sites, empowering them to apply concepts and content that were being simultaneously taught in their didactic courses.

Process: Careful consideration of concepts was necessary to ensure that associated skills and knowledge were scaffolded for early clinical application. The concepts of professionalism, communication, health, and safety were chosen because of their broad relevance across all content areas, and with the expectation that they be competently demonstrated by the student in every experience regardless of the level of education, setting or patient population. We designed and implemented a new and innovative integrated didactic and clinical course to create an early and meaningful practice experience for novice students caring for a generally healthy population through thoughtful construction of an appropriate conceptual framework, deliberately leveled learning outcomes, and specific student expectations.

Outcomes: Faculty, students, and clinical partners reported satisfaction with the first semester maternal/newborn clinical experience. All recognized increased preparation, competence, and confidence of students in second semester medical-surgical clinical rotations. The formalized information from this IRB approved study will be used to assist in further curricular refinement that will be sustained through the design of carefully scaffolded clinical experiences framed within our concept-based curriculum and integrated across semesters. This information will help us identify strategies for enhancing on-going clinical partnerships by creating clear and appropriately leveled expectations for students' clinical performance in every clinical setting.

Conclusions: Childbirth is the most common reason for hospitalization in the US. Providing high quality, safe, and cost-effective care for pregnant women and their families is crucial to the overall health of the nation (AWHONN, 2014). Further study is planned to identify specific knowledge and skill development of students for subsequent clinical practice in higher acuity patient care areas. This information will be used to assist with further curricular refinement and identify strategies for strengthening collaborative clinical partnerships.

Reference: Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN). (2014). Nursing Education. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*, 43(1), 130-131.

SIMULATION, IPE, AND CLINICAL EDUCATION

Patient Centered Care in a Formative Clinical Capstone

*Michelle Dedeo, DNP, RN, CNS
Assistant Professor
School of Nursing
Linfield College
Portland, OR*

Purpose: Develop a formative clinical capstone to assess the integration of clinical practice learning and nursing practice standards related to safety, communication, and professional practice.

Background: A formative capstone simulation has been integrated into the first semester experiential clinical course providing the opportunity to assess development of professional clinical practice for beginning first semester nursing students. Utilizing a near-peer model of new graduate registered nurses as standardized patients the process of evaluating a head-to-toe assessment, reflection, and incorporation of feedback in the developing practice is assessed by faculty and evaluated by a rubric based on Benner's novice to expert theory. The expectation is established that the student will seek feedback from the patient regarding their individual experience as a patient in the care of this nursing student. The nursing student utilizes reflection to develop a plan for how they will incorporate this feedback into their developing practice.

Process: The course curriculum for this first semester experiential learning course includes system specific and holistic patient assessments, professional nursing practice standards, communication, nursing intervention, evaluation, and documentation. Each is scaffolded over the course of the semester. Students build and integrate knowledge to support development of their professional practice. Simulation using low, mid, and high fidelity experiences are incorporated throughout the course. Evaluation rubrics were developed moving student clinical evaluation away from a task-based checklist for simulation and towards at the professional level evaluation incorporating standards for safety, assessment, communication, documentation, and reflection. The near-peer standardized patients are recent graduate nurses with BSNs of which students are informed after they have received patient feedback.

Outcomes: In this beginning clinical course utilizing 100% simulation, the student experience receiving feedback from a human patient, compared to a simulation patient, increases their individual satisfaction and the validity of the feedback received. Students provide high-level praise and positive feedback regarding this clinical experience. Utilizing a near-peer model increases the relevance of the feedback to developing clinical practice as well as supports their individual plan for incorporating the feedback as they progress. Establishing the expectations of patient communication and seeking feedback supports the fundamental expectation of incorporation reflection and feedback into developing practice.

Conclusion: Utilizing feedback by an individual to drive the development of their practice meets professional practice principles of nursing education and clinical practice. Future research will be focused on how students sustain their experience of seeking patient feedback in varied clinical settings, how their development of their head to toe assessment process and practice continues to solidify with feedback, and how their expectations of feedback align with their reflection of their current developing practice.

SIMULATION, IPE, AND CLINICAL EDUCATION

Rethinking Clinical Teaching through the Preceptor Pedagogy: A Qualitative Study

*Lina Kantar, EdD, RN
Clinical Assistant Professor
Hariri School of Nursing
American University of Beirut
Beirut, Lebanon*

Purpose/Aim: This is a research study that aimed at understanding the nature of clinical teaching rendered by preceptors to undergraduate nursing students in practice settings. It aimed as well at exploring the pedagogical principles and educational processes that preceptors employed to impact student learning.

Background: The focus of the nursing discipline on the clinical teaching of nurses is unprecedented. Clinical teaching is foundational when thinking the preparation of nurses, transfer of knowledge, clinical reasoning, and professional formation. At present, clinical education is provided in two formats: traditionally-driven and preceptor-driven. The advent of the preceptor-driven model and the paucity of research in this domain have created the impetus to explore how preceptors teach, understand the determinants of a learner-focused clinical experience, and assess the pedagogical underpinnings of the various decisions that preceptors usually make during instruction.

Methods: The descriptive, qualitative, multiple-case study design, guided by the cognitive task analysis research technique (CTA), was used to gain insights into how 18 preceptors, situated in three health care facilities, provide direct clinical teaching to undergraduate nursing students. The two-step procedure characterizing CTA entailed: direct observation of preceptors while involved in the clinical teaching of nursing students followed by face-to-face interviews. The documented observations solicited the various teaching activities that took place in the clinical setting, the decisions made and actions taken, as well as comments made on student's performance. Each preceptor was subjected to questions based on the documented activities, thus forming the skeleton of the interview. Observation notes and interview data were analyzed using two modes of interpretation: (a) pattern identification, since the 18 preceptors are situated in three different health care settings, and (b) data thematization.

Results: The analysis process yielded four chief constructs: (1) partnering, (2) enabling, (3) nurturing, and (4) meaning construction. In fact, these constructs were solicited in the decisions the preceptors made, the comments they gave to students, and nursing activities they were engaged in. An in-depth analysis of each construct helped reveal a set of teaching practices that each of the 18 preceptors demonstrated at varying levels. The frequency of occurrence of each practice was measured to capture its significance in the teaching process.

Implications for Practice: The study results will contribute to the advancement of nursing education through an improved education system that incorporates new concepts and insights into clinical teaching and preceptorship practices. The emergent concepts will set the framework of the preceptor pedagogy, as well as the outline for preceptor education programs that aim at preparing candidates for the role. Recommendations will guide curriculum leaders to professional development initiatives that emphasize best teaching practices in clinical settings. Such practices will promote seamless academic progression.

**SUPPORTIVE CARE INTERVENTIONS FOR
CANCER SURVIVORS AND THEIR FAMILY
CAREGIVERS**

SUPPORTIVE CARE INTERVENTIONS FOR CANCER SURVIVORS AND THEIR FAMILY CAREGIVERS

Overview: Interventions for Cancer Survivors and Their Caregivers: Results from the Shine Group

*Terry Badger, PhD, RN, PMHCNS-BC, FAAN
Professor
College of Nursing
University of Arizona
Tucson, AZ*

*Chris Segrin, PhD
Professor
Department of Communications
College of Social and Behavioral Sciences
University of Arizona
Tucson, AZ*

*Tracy E. Crane, PhD, RDN
Assistant Professor
College of Nursing
University of Arizona
Tucson, AZ*

*Alla Sikorskii, PhD
Professor
Department of Psychiatry
College of Medicine
Michigan State University
East Lansing, MI*

*Thaddeus Pace, PhD
Assistant Professor
College of Nursing
University of Arizona
Tucson, AZ*

Purpose: This symposium will feature four speakers from the Symptoms, Health, INnovation and Equity (SHINE) multidisciplinary research group at the University of Arizona whose focus is on the mechanisms of shared well-being in survivor-caregiver dyads and the development of novel interventions for cancer survivors and informal caregivers, especially Latina/os. The purpose of this symposium is to describe three supportive care interventions, all of which are focused on improving health-related quality of life for both members of the dyad.

Background: Depression, anxiety, and other domains of health-related quality of life are shared between cancer survivors and their informal caregivers. To best support survivors and caregivers, it is essential to understand how health-related quality of life is shared, and how relevant socio-cultural factors may influence the interconnectedness of health-related quality of life in survivor-caregiver dyads.

Symposium Organization: The first presentation in this symposium will describe findings on the relationship between indicators of distress (fatigue, depression, and anxiety) and acculturation in family caregivers of Latina breast cancer survivors. The second presentation will consider health-related quality of life outcomes from a recently completed trial of breast cancer-caregiver dyads, comparing an 8-week telephone interpersonal counseling intervention to an 8-week telephone supportive health education intervention. The third presentation will describe the symptom experience and adherence to the American Cancer Society Guidelines on Nutrition and Physical Activity in an ongoing intervention for Latina/o cancer survivor-caregiver dyads. The final presentation will describe feasibility and acceptability of a novel compassion meditation-based intervention called CBCT[®] to improve health-related quality of life for cancer survivor-caregiver dyads. The symposium will conclude with a discussion about supportive care interventions designed to improve health-related quality of life in both cancer survivors and informal caregivers, and the possible mechanisms involved.

Conclusion: This symposium will provide a comprehensive overview of the cancer survivor and family caregiver research studies, recently completed and ongoing, with the Arizona SHINE group. These dyadic interventions to improve health-related quality of life span the cancer continuum and provide evidence for the need of more supportive care interventions for both the cancer survivor and family caregiver, particularly with Latina/os.

SUPPORTIVE CARE INTERVENTIONS FOR CANCER SURVIVORS AND THEIR FAMILY CAREGIVERS

Distress and Support among Family Caregivers of Latina Breast Cancer Survivors

*Chris Segrin, PhD
Professor*

*Department of Communications
College of Social and Behavioral Sciences
University of Arizona
Tucson, AZ*

*Terry Badger, PhD, RN,
PMHCNS-BC, FAAN
Professor
College of Nursing
University of Arizona
Tucson, AZ*

*Alla Sikorskii, PhD
Professor
Department of Psychiatry
College of Medicine
Michigan State University
East Lansing, MI*

*Tracy E. Crane, PhD, RDN
Assistant Professor
College of Nursing
University of Arizona
Tucson, AZ*

*Thaddeus Pace, PhD
Assistant Professor
College of Nursing
University of Arizona
Tucson, AZ*

Purpose/Aims: This investigation examined indicators of distress and availability of social support among different types of family caregivers, testing acculturation as a post hoc explanation of potential differences in distress and support.

Rationale/Conceptual Basis/Background: Familism is a Latino cultural value that prescribes extensive family involvement and caregiving. Although familism may be a boon to cancer survivors, it could potentially compel some family members to provide care beyond their means, thereby compromising their own welfare.

Methods: The sample consisted of 258 family caregivers of Latinas in treatment for breast cancer. Caregivers included spouses/significant others ($n = 74$), siblings ($n = 40$), daughters ($n = 72$), mothers ($n = 18$), other family members ($n = 24$), and friends who function as fictive kin ($n = 30$). PROMIS 8-item short forms were used to assess three indicators of distress (fatigue, depression, and anxiety) and two indicators of support (emotional and informational). Analysis of variance was used to compare the groups, and correlations tested acculturation as a potential mechanism that may contribute to distress and support among family caregivers.

Results: Mothers of Latina breast cancer survivors had higher depression, anxiety, and fatigue than any other family relationship group. However, these differences were statistically significant ($p < .01$) only for depression, but similarly patterned for anxiety ($p = .08$) and fatigue ($p = .07$). Mothers also had lower informational support available to them than the other family group ($p < .02$). Post hoc analyses showed that acculturation was significantly correlated with depression ($r = -.16, p = .01$) and informational support ($r = .22, p < .01$). Mothers had the lowest level of acculturation of all family groups ($p < .001$).

Conclusions: Mothers of Latinas with breast cancer may be particularly vulnerable to experiencing distress and low informational support, perhaps as a function of their lower acculturation.

Funding: American Cancer Society, Grant/Award Number: RSG-12-120-01□CPPB

SUPPORTIVE CARE INTERVENTIONS FOR CANCER SURVIVORS AND THEIR FAMILY CAREGIVERS

Comparison of Two Supportive Care Interventions for Cancer Survivors and Caregivers

Terry Badger, PhD, RN, PMHCNS-BC, FAAN

*Professor
College of Nursing
University of Arizona
Tucson, AZ*

*Chris Segrin, PhD
Professor*

*Department of Communications
College of Social and Behavioral Sciences
University of Arizona
Tucson, AZ*

*Alla Sikorskii, PhD
Professor*

*Department of Psychiatry
College of Medicine
Michigan State University
East Lansing, MI*

Tracy E. Crane, PhD, RDN

*Assistant Professor
College of Nursing
University of Arizona
Tucson, AZ*

Thaddeus Pace, PhD

*Assistant Professor
College of Nursing
University of Arizona
Tucson, AZ*

Purpose/Aims: The purpose of this study was to compare two telephone-based supportive care interventions, telephone interpersonal counseling (TIP-C) intervention and supportive health education (SHE) intervention, for Latina breast cancer survivors and their family caregivers.

Rationale/Conceptual Basis/Background: Latina cancer survivors experience higher fatigue, depression, anxiety, and other symptoms than non-Hispanic white cancer survivors. Informal caregivers, typically family members or friends, provide more than half of all care needed during cancer treatment, including assistance with managing survivors' symptoms.

Methods: The trial enrolled N=230 survivor-caregiver dyads and compared an 8-week TIP-C intervention to an 8-week SHE. Separate telephone interviews with each member of survivor-caregiver dyad were conducted at baseline, and 2, 4, and 6 months later. Presence of 12 symptoms and general global symptom distress were measured using the general symptom distress scale (GSDS). Patient Reported Outcomes Measurement Information System (PROMIS) 8-item short forms were used to assess fatigue, depression, and anxiety. Three repeated measures of survivor or caregiver outcomes were analyzed using linear mixed effects models, while adjusting for baseline values of each measure.

Results: Among survivors, SHE was more effective than TIP-C in reducing the number of symptoms at 4 and 6 months ($p=.03$, and $p<.01$, respectively) and global symptom distress at 4 months ($p=.04$). TIP-C was superior to SHE in managing depression at 2 months ($p=.04$). No differences between trial arms were found on fatigue or anxiety, and all symptoms declined over time in both arms. Among caregivers, SHE was more effective than TIP-C in reducing the number of symptoms and global symptom distress ($p=.04$ and $p=.05$, respectively), fatigue ($p=.04$), and anxiety ($p=.01$) at 2 months. TIP-C was superior to SHE in managing depression at 4 months ($p=.04$).

Conclusions: Both interventions were successful but had different benefits for managing survivors' and caregiver's symptoms. Adaptive tailoring of interventions is needed in future work to find the right intervention given the characteristics of survivor-caregiver dyad.

Funding: American Cancer Society, Grant/Award Number: RSG-12-120-01-CPPB

SUPPORTIVE CARE INTERVENTIONS FOR CANCER SURVIVORS AND THEIR FAMILY CAREGIVERS

An Integrated Lifestyle Intervention for Cancer Survivors and Caregivers

*Tracy E. Crane, PhD, RDN
Assistant Professor
College of Nursing
University of Arizona
Tucson, AZ*

*Terry Badger, PhD, RN, PMHCNS-BC, FAAN
Professor
College of Nursing
University of Arizona
Tucson, AZ*

*Alla Sikorskii, PhD
Professor
Department of Psychiatry
College of Medicine
Michigan State University
East Lansing, MI*

*Chris Segrin, PhD
Professor
Department of Communications
College of Social and Behavioral Sciences
University of Arizona
Tucson, AZ*

*Thaddeus Pace, PhD
Assistant Professor
College of Nursing
University of Arizona
Tucson, AZ*

Purpose/Aims: The aim of this study is to determine the feasibility and acceptability of a 12-week telephone-based, integrated symptom management and lifestyle intervention for Latina cancer survivors and their informal caregivers.

Rationale/Conceptual Basis/Background: Diagnosed at younger ages, later stages and with fewer resources, Latina cancer survivors are vulnerable to high symptom burden, which lingers after treatment and is both a barrier to adopting healthy lifestyle behaviors and an important intervention target.

Methods: Latina cancer survivors who report at least one common cancer-related symptom and their informal caregivers (the dyad) are eligible for the study. Dyads are randomized in 2:1 ratio to a Symptom Management + American Cancer Society's (ACS) Guidelines on Nutrition and Physical Activity intervention or attention control. All survivors have 12 weekly telephone symptom assessments using the General Symptom Distress Scale. In the intervention arm, health coaches refer survivors to strategies in the printed Symptom Management Handbook (SMH), reinforce the strategies, and work with participants to establish goals to meet the ACS Guidelines. Calls to the caregiver focus on the survivor and caregiver's goals to maximize relevance and caregiver engagement. Daily activity is tracked with Fitbit; diet and physical activity are assessed at baseline and week-13 using the National Cancer Institute's Dietary Screener and International Physical Activity Questionnaire.

Results: To date, 31 of the 36 dyads have enrolled in the study, survivor mean age is 62.3 ±10.1 (SD) and caregiver mean age is 56.1±18.9 years. At baseline only 25% of survivors were meeting the ACS guidelines for diet, and 12.5% for physical activity. Corresponding rates for caregivers were 15% and 55%. Over 80% of the dyads prefer to receive the intervention in Spanish. Average number of symptoms at baseline is 8.4±3.5 for survivors and 5.5±3.9 for caregivers, with fatigue, sleep difficulties, anxiety and pain being most distressing for both members of the dyad.

Conclusions: This feasibility trial is one of the first to simultaneously address symptom management and lifestyle behaviors. Both members of the dyad suffer from symptoms that are barriers to meeting the ACS guidelines on Nutrition and Physical Activity.

Funding: American Cancer Society, Grant/Award Number: 128749-IRG-16-124-37-IRG

SUPPORTIVE CARE INTERVENTIONS FOR CANCER SURVIVORS AND THEIR FAMILY CAREGIVERS

Cognitively-Based Compassion Training for Cancer Survivors and Caregivers

Thaddeus Pace, PhD, Assistant Professor, College of Nursing, University of Arizona, Tucson, AZ; Sally Dodds, PhD, Research Associate Professor (Retired), Department of Psychiatry, College of Medicine, University of Arizona, Tucson, AZ; Terry Badger, PhD, RN, PMHCNS-BC, FAAN, Professor, College of Nursing, University of Arizona, Tucson, AZ; Alla Sikorskii, PhD, Professor, Department of Psychiatry, College of Medicine, Michigan State University, East Lansing, MI; Lobsang T. Negi, PhD, Professor of Practice, Department of Religion, Emory University, Atlanta, GA; Chris Segrin, PhD, Professor, Department of Communications, College of Social and Behavioral Sciences, University of Arizona, Tucson, AZ; Tim Harrison, Assistant Director, Cognitively-Based Compassion Training, Emory University, Atlanta, GA; Tracy E. Crane, PhD, RDN, Assistant Professor, College of Nursing, University of Arizona, Tucson, AZ

Purpose/Aims: The purpose of this study was to determine the feasibility and acceptability of an 8-week compassion meditation-based intervention called CBCT® (Cognitively-Based Compassion Training) for survivors of solid tumor cancers and their informal caregivers (ICs) (i.e. family members or friends). We also worked to demonstrate feasibility of measuring features of depression, anxiety, and fatigue in survivor-IC dyads taking part in the intervention.

Rationale/Conceptual Basis/Background: Cancer survivors and their ICs often experience higher depression, anxiety, and fatigue both during and after primary cancer treatment. Our prior work suggests these impairments are interdependent between survivors and ICs. The goal of this trial was to assess feasibility and acceptability of CBCT for survivor-IC dyads, with the longer-term goal of establishing CBCT in order to promote well-being in survivor-IC dyads. We expect that CBCT will leverage “emotional contagion” within survivor-IC dyads to promote sharing of positive affect and well-being for both dyad members, potentially dismantling the possibility of shared negative affect.

Methods: Dyads included survivors within 10 years of completing primary treatments (chemotherapy, radiation, surgery) and at least one member with mild depression or anxiety symptoms (determined by Patient Reported Outcomes Measurement Information System [PROMIS] 4a short forms). Dyads were randomized to either CBCT or an 8-week active attention control (cancer health education, CHE). Both the CBCT and CHE groups met for 90 minutes each week, for 8 continuous weeks. At-home meditation practice was encouraged in the CBCT group. Feasibility was measured by retention, and acceptability by CBCT and CHE intervention attendance and at-home practice (CBCT only). We used PROMIS 8a forms to assess depression and anxiety, and the PROMIS 7a to assess fatigue.

Results: Thirty-two individuals were enrolled in the study with a retention rate of 88%. Participants randomized to CBCT and CHE attended 75% and 87.5% of classes, respectively. At-home practice of CBCT averaged 4.90 (SD=1.92) sessions per week, with an average of 18.44 (SD=1.97) minutes per session. Baseline PROMIS depression, anxiety, and fatigue scores were 53.29 (SD=7.49), 58.19 (SD=5.35), and 55.83 (SD=4.86) for survivors and 52.55 (SD=5.21), 53.58 (SD=7.37), and 54.98 (SD=5.88) for caregivers, respectively.

Conclusions: Intervention attendance and adherence was good, and better than prior studies involving CBCT including a study by us with breast cancer survivors. Both CBCT and CHE are feasible and acceptable in survivor-IC dyads experiencing mild-moderate depression, anxiety, and fatigue. The results of this trial are an important step toward exploring the benefits of CBCT for both survivors of solid tumor cancers and their informal caregivers.

Funding: Jack Challem Trust

Abstracts of Poster Presentations

TEACHING STRATEGIES

TEACHING STRATEGIES

Safe Patient Handling and Mobilization (SPHM) in an Undergraduate Nursing Program

*Kristy Lanciotti, MN, RN, CPN
Instructor
School of Nursing
Oregon Health & Science University
Portland, OR
ivicek@ohsu.edu*

*Ginger Keller, PhD, RN, CNS
Assistant Professor
School of Nursing
Oregon Health & Science University
Portland, OR*

*Lynda Enos, RN, MS, COHN-S, CPE
Ergonomics Consultant
Humanfit, LLC
Portland, OR*

Purposes/Aims: The aim of the project is to improve nursing practice by changing undergraduate curricular content in one school of nursing to reflect current evidence in safe patient handling and mobilization (SPHM). We provide background on the importance of including SPHM in undergraduate nursing curricula; and describe methods to incorporate it into existing courses, lessons learned from our pilot group, and subsequent changes made to content and delivery. We report on survey data and discuss future steps.

Rationale/Background: Lifting, transferring, and moving patients during nursing care puts patients and staff at risk for injury. Evidence supports using SPHM techniques and equipment to reduce injury, and SPHM programs are increasingly prevalent in clinical settings. In our undergraduate nursing program, SPHM concepts were not being taught explicitly or consistently. Faculty, clinical partners, and students recognized the need to better prepare graduates to facilitate a change in healthcare culture to make SPHM a routine part of nursing practice.

Undertaking/Best Practice/Approach/Methods/Process: Faculty, with support from a clinical partner, initiated a program for delivery and spiraling of SPHM concepts and skill development in 3-year Baccalaureate and 15-month Accelerated Baccalaureate curricula. Concepts and skills taught were: ergonomics and risk factors for musculoskeletal injury; use of an evidence-based mobility check algorithm as part of a comprehensive nursing assessment; and hands-on practice with SPHM equipment in the skills lab setting. In year one of the project, the focus was on the earliest clinical courses in the program, with subsequent focus on reinforcing content during later courses.

Outcomes Achieved/Documented: Objective data on students' report of preparedness to participate in SPHM in clinical settings are being collected with student surveys at baseline, after the SPHM content delivery in the first clinical course of the curricula, and just before graduation.

Conclusions: Anecdotal reports and survey data from first cohort students as they reached their final term of the program reinforce the effect of the curricular change. Some students report frustration that not all nurses in clinical settings follow current evidence-based practice for SPHM. However, students report feeling motivated to influence positive change in their future workplaces. Survey data will be compiled and reported and curricula modified accordingly in this continuous quality improvement project.

TEACHING STRATEGIES

Hand-Written Journals to Support Positive Behavior Change among University Students

*Elbina Rafizadeh, RN, BSN, MSN, Lecturer
Arnab Mukherjee, DrPH, MPH, Assistant Professor
Stephen Morewitz, PhD, Lecturer
Department of Health Science, College of Science
California State University, East Bay
Hayward, CA*

Purpose/Aims: A recent survey of 288 US undergraduate education institutions, indicated an increasing need for mental health services for students' complaints, such as sleep disturbances and inability to study. These findings suggest that students are at risk of developing stress-related maladaptive behaviors, including poor diet, and drug or alcohol use. We implemented an expressive hand-written journaling assignment in a health elective course, hypothesizing that it could help students to improve 1) self-awareness, 2) ability to manage negative health behavior and 3) self-confidence and self-efficacy.

Rationale/Background: The Health Maintenance Consortium held in 2010, theorized that mechanisms of behavior change are influenced by knowledge or cognition, self-efficacy or intrinsic motivation, behavior skill building, and social reinforcement. Expressive hand-writing journaling helps students recognize negative thoughts and behaviors that affect the six dimensions of health: physical, emotional, intellectual, spiritual, social, and occupational. Hand-writing, an executive action, correlates with pre-frontal cognitive function, which is responsible for decision-making and critical thinking. We posit that this simple intervention will assist the student to realize their own intrinsic strengths. Also, the intervention can be implemented in elective health education courses at universities as an adjunct to traditional approaches like stress counseling. Importantly, such courses offer knowledge about possible causes of high-risk behavioral choices which have potential to prevent more serious health-related consequences.

Approach: During the Winter 2016 and Winter 2017 ten-week school sessions, pre-nursing, and other pre-clinical students enrolled in a health maintenance course completed a structured behavior change assignment based on the health belief model or transtheoretical model. Students were randomly assigned to two groups, a journaling group (J) and non-journaling group (NJ). The students in the J group wrote a weekly hand-written journal to reflect on their progress. Weekly, the NJ students verbally reported their progress. At the end of the course, all students' hand-wrote their reflections of their experiences by answering an open-ended questionnaire.

Outcomes: A total of 75 students participated (N=75: J=38, NJ=37). Participant age ranged from 18-33 years, with four students over 25 years. The final questionnaire responses showed that both groups successfully tracked their ability to manage negative health behaviors. However, students from the J group described details about increased self-awareness and behavior change awareness (60%), feelings of self-efficacy and self-confidence (14%), emotional and mental relief (26%), and one student described feeling more committed to deciding about a behavior choice. In the NJ group, 42% depended on some form of social support; 52% used other methods, such as a phone app or calendar.

Conclusions: Hand-written journals may help students to express a deeper awareness and knowledge of their behaviors, including self-efficacy and self-confidence. It is unclear, however, whether positive behaviors will be adopted or sustained. Computers and technology have displaced hand-writing in many areas, despite potential advantages. The inclusion of hand-writing journaling may be helpful in nursing curricula, in university-level stress counseling, and health education maintenance courses. There is also a need for a follow-up study to determine if the students from both groups have sustained their behavior change.

TEACHING STRATEGIES

Using Nurses' Information Practices to Improve BSN Information Literacy Instruction

Elizabeth (Betsy) Hopkins, MLS
Nursing and Communication Disorders Librarian
Harold B. Lee Library
Brigham Young University
Provo, UT

Anne R. Diekema, PhD, MLS
Instruction and Outreach Librarian
Gerald R. Sherratt Library
Southern Utah University
Cedar City, UT

Brandon Patterson, MIS, MA
Technology Engagement Librarian
Spencer S. Eccles Health Sciences
Library University of Utah
Salt Lake City, UT

Nena Schvaneveldt, MSLIS, AHIP
Assistant Librarian
Spencer S. Eccles Health Sciences Library
University of Utah
Salt Lake City, UT

Purpose: Our study sought to answer the question: How can we improve academic information literacy instruction for nursing students based on the information practices of professional nurses?

Background: Information seeking is an essential part of evidence-based practice and effective healthcare delivery. While there is significant literature on both the information seeking behavior of professional nurses and effective strategies to teach information literacy, there is a paucity of evidence connecting nurses' information practices with their education. We sought to survey our alumni, as subject matter experts in both our information literacy programs and as practicing nurses, to evaluate how our instruction prepared them for clinical information seeking.

Methods: A 59-item survey was distributed to 1,926 BSN alumni who graduated between 2012-2017 from four universities in the Mountain West. We received 349 eligible responses, for an overall response rate of 18.1%.

Results: Nurses seek information to provide excellent patient care. Every day, most nurses use electronic medical records for information in addition to asking colleagues. Time and lack of access were barriers to using information. Criteria used for evaluating information varied widely in quality, though most respondents were confident in their evaluation skills. Our alumni provided a number of suggestions for improving information literacy instruction, including instruction on non-academic sources and using scenarios that mirror problems nurses encounter every day.

Implications: We argue that information literacy instruction for nursing students should focus not only on academic research skills but should prepare them for the information environment they will face in the workplace. We propose three areas for increased emphasis: clinical scenarios, teaching beyond academic sources, and lifelong learning. In addition, we recommend improved on-the-job training on information resources for new nurses.

TEACHING STRATEGIES

The Experience of Nursing Students in Substance Abuse Remediation

*Maureen O'Malley, PhD, RN
Associate Director & Professor
School of Nursing
University of Alaska Anchorage
Anchorage, AK*

*Marianne Murray, DNP, MSN,
CHSE, RN
Director
School of Nursing
University of Alaska Anchorage
Anchorage, AK*

*Thomas J. Hendrix, PhD, RN
Associate Professor
School of Nursing
University of Alaska Anchorage
Anchorage, AK*

Question/Aims: We sought to understand how nursing students experienced a program of substance abuse remediation that sought to prepare high-risk students to return to clinical coursework. The aims were participatory in nature: empowering program graduates to understand their personal decisions, to foster long-term sobriety, as well as completion of nursing studies.

Rationale/Conceptual Basis/Background: In the years after marijuana legalization, we found an increase in positive drug screening tests and other evidence of substance abuse. We developed a university-based, confidential, nonpunitive, substance abuse remediation program informed by current best practices (Gates, Sabioni, Copeland, LeFoll & Gowing, 2016). The program included three components: an initial administrator interview, substance abuse screening with treatment recommendation by a certified addictions counselor, and individual remediation planning with the University alcohol drug and wellness educator.

Approach: For this exploratory, qualitative project, we sought to understand the student perspective, the nature of the student journey and the impacts on mental health and sobriety. We contacted all graduates of the substance abuse program and conducted six (6) in-depth interviews to foster introspection, reflection and imagination. We sought to distill the narrative into themes of shared meaning (Elo & Kyngas, 2008).

Outcomes: We found three (3) themes that represented all graduates. They reported feeling *Scared* initially, they appreciated the gained *Insight*, and they felt more *Prepared* with strategies to address their triggers. We found two separate thought groups, one group reported preexisting struggles with excess anxiety and personal self-doubt and a second group reported their marijuana use was casual and purely recreational. The anxious graduates were very *Grateful* for the program, a view not shared as keenly by the casual, recreational users.

Implications: Most graduates appreciated the program and our interviews. They offered few suggestions for program change; however, they suggested we focus increased efforts on prevention, informing students early about the consequences of marijuana use.

TEACHING STRATEGIES

Poster Presentations to Support Students' Synthesis of Genetics Course Content

Lauri Linder, PhD, APRN, CPON

*Associate Professor, College of Nursing
University of Utah, Salt Lake City, UT*

Purpose: Describe the use of poster presentations as a strategy to support synthesis of key clinical genetics content areas among doctorate of nursing practice students.

Background: The American Association of Colleges of Nursing (AACN) *Essentials of Doctoral Education for Advanced Nursing Practice* recognizes genomics as foundational for practice. Although all doctorate of nursing practice (DNP) students at the University of Utah complete a 2-credit course as part of their core program of study, the focus of this course has been breadth of knowledge across the lifespan rather than depth of knowledge in a focused practice specialty. While the course addresses many genetic conditions as exemplars, the opportunity to explore conditions in depth and detail is limited. The poster presentation assignment was implemented to support students in synthesizing clinical genetics course content areas in relation to a genetic condition that is relevant to their advanced practice specialty. Secondary goals of this assignment are to support students in collaborative learning and to develop professional presentation skills.

Methods: The poster presentation assignment is completed in stages over the course of the semester. Students self-select into groups of 2 or 3, typically based on DNP specialty track, and they are allowed to select their own topic for the poster presentation. Students have the opportunity for feedback during the course of the semester as they create their posters. Posters feature the following content areas:

- **Basic overview of the condition** – including the incidence/prevalence, age of onset, clinical characteristics, and common physical exam findings
- **Molecular/biologic basis of the condition** - genes and/or chromosomes involved in the condition as well as specific mutations or polymorphisms that influence the pathophysiology
- **Family health history** - typical family health history findings (even if negative), implications for future pregnancies either for parents of an affected individual or the individual
- **Pharmacogenomic implications** - medications that might/might not be indicated based on the individual's genotype
- **Technology** - testing or screening that is indicated based on the condition, including the type technology used
- **Ethical implications** - these could vary based on the nature of the underlying condition and extend to family members and society
- **Multidisciplinary care team implications** – multidisciplinary team members likely to be involved in providing services to an affected individual, including the DNP-prepared nurse
- **Health policy implications** - these could range from local institutional to global health policy

Students receive a template for creating their poster presentations. The final two class sessions are dedicated to oral poster presentations.

Outcomes: Course evaluations indicate that students value the poster presentation as a learning opportunity to explore a genetics-focused topic of relevance to their specialty practice area in greater depth. Students indicated that they appreciated the opportunity to identify their own team members. Student comments indicate that the poster assignment helped bring course content together. Several students also commented that completing a poster early in their program of study provided preparation for their future DNP capstone project presentation.

Conclusions: The poster presentation assignment supports students in synthesizing course content and supports professional presentation skills.

TEACHING STRATEGIES

Trauma Informed Care Education Using a Flipped Classroom Teaching Strategy

*Cathlyn Mendijs, MSW, MSN, RN
Assistant Clinical Professor
College of Nursing
Montana State University
Kalispell, MT*

*Sandra W. Kuntz, PhD, RN
Associate Professor
College of Nursing
Montana State University
Kalispell, MT*

Purpose/Aims: The purpose of this project was to address a gap identified in the university nursing curriculum regarding trauma informed care best practice and education.

- Aim 1: Survey the literature for trauma informed care educational interventions.
- Aim 2: Develop an evidence based Trauma Informed Care education module for bachelor's level nursing students.

Rationale/Background: Trauma informed care education has been identified as a gap in the university nursing curriculum. To prepare nurses to recognize and care for patients with a history of trauma, the development and implementation of trauma informed care curriculum in nursing education is vital. Best practice for the care of these patients is emerging, but trauma informed care is a relatively new focus in both nursing programs and health care settings.

Brief Description of the Undertaking: Credible sources from peer-reviewed publications in the nursing and education fields within the past five years were reviewed that discussed trauma informed care training and/or educational strategies. Best practices were integrated into a flipped classroom educational module.

Outcomes: The development and implementation of a flipped classroom module on trauma informed care is a solution for the curriculum gap. The flipped classroom teaching strategy contains activities that have been identified as best practice in trauma informed care training and addresses the complexity of the topic. The flipped classroom involves students doing pre-class work outside of the classroom and then active learning activities during class time. The combination of didactic and authentic learning activities enables students to gain understanding, analyze, and apply the concepts of trauma informed care. The module contains on-line lectures, a video, the Adverse Childhood Experience Questionnaire, reflective journaling, a discussion, and role-play scenarios in which students apply the principles of trauma informed care communication techniques.

Conclusions: Including trauma informed care education in the university nursing curriculum is significant for both nursing students and their future patients. It provides nursing students with foundational knowledge about how trauma affects the future health of individuals and how to provide the best care to these patients. It helps nurses identify behavior that could be related to trauma, respond caringly instead of judgmentally, and implement evidence based communication interventions. According to Hall et al. (2016), when trauma informed care is not used, patients who have trauma histories may be further traumatized in the health care setting. Being cared for by nurses who understand and apply trauma informed care interventions could potentially change the way patients who have trauma histories view healthcare, increase their voluntary access to health services, and even improve their outcomes. Future research on the impact of the trauma informed care curriculum is recommended due to the important but relatively new focus on the topic in nursing education.

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TEACHING STRATEGIES

Students' Knowledge of and Confidence in Oral Health Care

*Young-Shin Lee, PhD, RN
Associate Professor
School of Nursing
San Diego State University
San Diego, CA*

Oral disease is a silent epidemic. Half of American adults have periodontal disease and the most common chronic children's disease is dental caries. Although oral health is a critical public health issue, the oral health care delivery system in primary health care has not been well developed. Recently medical and dental disciplines have launched initiatives for an inter-professional approach. Nursing education has rarely incorporated the content of oral health care into nursing programs. An essential role for the nursing workforce is to provide patient and public health care, along with an assessment of students' competency in oral health care.

The **purpose** of this study was to understand nursing students' confidence in knowledge, perception, and their own behavior in oral health care.

Methods: Nursing students (traditional and RN-BSN programs) completed a survey including status of dental education, knowledge of oral health and American Dental Association (ADA) guidelines regarding management of oral health, competency in oral health care and their own oral care behaviors.

Findings: Among 159 students, 64% reported no education regarding oral health in an official curriculum, and most of them who had oral education received it during or before high school; only 17% reported they learned about dental health during college. Among respondents, 68% thought the education regarding oral/dental health is important and necessary for nursing students. The scope of knowledge about recommended oral care and management, regular dental check-ups, and cause of tooth decay varies from 49% to 90%. The students' own oral care behaviors include: 90% and 50% perform tooth brushing (≥ 2 /day) and flossing (≥ 5 a week), respectively. Those who had previous dental education received in or before high school felt confidence at a level of 47% in providing oral care to patients compared to those who did not at a level of 25%.

Conclusion: This study shows that oral health education incorporated professionally into nursing programs would greatly develop to improving students' competency in oral care that results in promoting oral health status on all levels of population.

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TEACHING STRATEGIES

Standardized Exams: A Comparison of Student Outcomes Related to Various Implementation Strategies and Recommendations

Marianne Murray, RN, MSN, DNP, CHSE
Director, School of Nursing
University of Alaska Anchorage
Anchorage, AK

Sharyl Toscano, PhD, MS, BS, RN-CPN
Professor, School of Nursing
University of Alaska Anchorage
Anchorage, AK

Purposes/Aims: The purpose of the program evaluation study was twofold: to examine the relationship, if any between student standardized exam results and overall National Council Licensure Examination (NCLEX) performance and to examine if individual course testing policies affected student performance on the standardized content mastery exam in a Bachelor of Science in Nursing program in Alaska.

Rationale/Background: Standardized exam products have now become routine in nursing curricula. The notion that a testing package can “fix” low NCLEX scores in a nursing programs has become commonplace in nursing academia (Randolph, 2017). In 2013, the UAA BS program had a NCLEX pass rate drop to less than 85%. The program evaluation committee quickly rallied, increasing admission requirements and instituting other measures throughout the curriculum. One of the tenants that was executed to address the drop in NCLEX pass rates was the implementation of a standardized examination package used throughout the curriculum to assess mastery of course content. After a successful five years of use, NCLEX first time pass scores are again trending down. A gap analysis was performed this summer comparing the students standardized exam score results and overall NCLEX performance, individual course testing policy and student performance on mastery subject standardized exams.

Brief Description of the Undertaking/Best Practice, Including the Approach, Methods, or Process Used: Six courses were selected based upon relevance to NCLEX report indicators. Comparison of standardized exam testing policies, standardized exam outcomes related to policies, final course grade and distribution was completed. Standardized exam data for mastery exams was compared on unsuccessful NCLEX student candidates evaluating performance patterns.

Outcomes Achieved/Documented: Individual courses varied significantly throughout the curriculum on: benchmark percent/percentile for points, percent of grade allotted for standardized exam, points given to students for remediation, required pretest, and methods determining KAPLAN exam scoring. A rigorous testing policy appeared to make a significant difference in subject exam performance compared to moderate and easy exam policies (87.75% of the student meeting benchmark versus, 52.2%, and 10% students meeting benchmark respectively). Grade distribution and overall student GPA had no relationship to percent of student meeting standardized exam benchmark. Course policies that reward remediation without student achievement, such as giving extra credit, did not lead to improved performance (i.e. students meeting benchmark)

Conclusions: Adopt a standard policy for NCLEX prep exams with emphasis on student achievement of the benchmark. Students who are not yet successful at meeting benchmark are required to meet with the student success facilitator for more structured planning.

The program evaluation plan should work to include faculty involvement on an annual basis by providing individual course actions or inaction in their course reports. It is recommended that building reflection and intention into the course management forms is necessary so that subsequent proposed changes are easier to track for the program.

Reference: Randolph, P.K. (2017). Standardized testing practices: Effect on graduation and NCLEX pass rates. *Journal of Professional Nursing*, 33(3), 224–228.

TEACHING STRATEGIES

Assessing Bias in Evaluations of Teaching in a Minority-Serving College of Nursing

*Amy Levi, PhD, RN, CNM, WHCNP, FACNM, FAAN
HSC Vice Chancellor for Academic Affairs*

*Leah L. Albers Professor of Midwifery
Clinician Educator, Professor*

*Shauna Mangum, MSN, RN
PhD Student*

*Blake Boursaw, MS
Instructor*

*College of Nursing
University of New Mexico
Albuquerque, NM*

Purpose: The purpose of this research project was to assess student evaluations of teaching for possible biases by gender and race in a minority-serving college of nursing where students are predominately female (85%) and largely from under-represented minority populations (52%).

Background: The use of student evaluations of teaching (SETs) as a measure of faculty effectiveness has long been identified as problematic. Recent studies have focused on race and gender biases in student evaluations of teaching in academic disciplines outside of Nursing, but the possible existence of such biases in Nursing remains relatively un-assessed.

Methods: This study used a retrospective, matched pairs design to assess quantitative variations in student evaluations of teaching (SET) responses to mixed (Male or Female; White or Person of Color) faculty pairs teaching in the same course. Faculty and course identifiers were stripped from SETs from 2016-2018 for 28 courses with mixed gender faculty pairs and 40 courses with mixed race faculty pairs in a minority-serving college of nursing. The resulting data set contained 888 SETs from mixed gender faculty pairs and 1507 SETs from mixed race faculty pairs.

Means, standard deviations, and Pearson's correlations between ratings on a 1-5 scale on overall teaching effectiveness and approachability were compared by race and by gender and the statistical significance of observed differences were assessed using mixed effects linear regression models. Blinder-Oaxaca decompositions including interaction terms were used to interpret components of observed differences.

Results: Overall teaching effectiveness ratings were significantly ($p < .001$) higher among male faculty ($M = 4.6$, $SD = 0.7$) than female faculty ($M = 4.1$, $SD = 1.0$) as were approachability ratings ($M = 4.8$, $SD = 0.6$ vs. $M = 4.4$, $SD = 1.0$; $p < .001$). Correlations between approachability and teaching effectiveness were significantly stronger ($p < .001$) for male faculty ($r = .7$) than for female faculty ($r = .6$). In a Blinder-Oaxaca decomposition, only 51% of the difference in overall teaching effectiveness by gender was attributed to an independent effect of higher approachability ratings among male faculty, while the remaining 49% of the difference was related to differing relationships between approachability and effectiveness in SETs between male faculty and female faculty. Faculty of color had significantly higher ratings on approachability and overall teaching effectiveness than White faculty, although effect sizes were quite small (Cohen's $d = 0.3$, $p < .001$ for approachability; Cohen's $d = 0.1$, $p = .05$ for effectiveness). Course-level differences in overall teaching effectiveness by race ($M = 0.03$, $SD = 0.7$) showed somewhat greater variability than course-level differences in overall teaching effectiveness by gender ($M = 0.3$, $SD = 0.5$) and were not statistically significant.

Implications: Fair evaluation of teaching is essential to fair processes of promotion, tenure, and compensation for nursing faculty whose retention is essential to a robust future for nursing research, practice, and education. These results suggest that excessive reliance on student evaluations of teaching as a measure of faculty effectiveness may result in structural discrimination toward some faculty.

Funding: This project was supported in part by a research award from the Gamma Sigma chapter of Sigma Theta Tau International.

TEACHING STRATEGIES

Nursing Students' Willingness to Care for Older Adults: Korea vs the United States

*Insun Jang, PhD, RN
Associate Professor
Department of Nursing
Korean Bible University
Seoul, Korea*

*Doonam Oh, PhD, RN
Associate Professor
Department of Nursing Science
Hoseo University
Cheonan, Korea*

*Yeon Sook Kim, DNP, RN, CCRN
Assistant Professor
Department of Nursing
California State University, San Bernardino
San Bernardino, CA*

Purpose: The purpose of this study was to investigate factors associated with nursing students' willingness to care for older adults in two countries: the United States and South Korea, in pursuit of improving nursing students' willingness to care for older adults in nursing programs.

Background: The older adult population has higher health care needs than other population and the number of older adults has grown worldwide. As they often have chronic and persistent diseases, nurses' role in caring for this population is more vital than before. Because nursing students are future nurses, it is meaningful to explore nursing students' desire to care for older adults. However, there is a paucity of studies on nursing students' intention to care for older adults. In addition, willingness to care may be varied by culture.

Methods: This cross-sectional study was conducted among 437 undergraduate nursing students who enrolled in Baccalaureate nursing program in South Korea and the United States, from May 25 to 31, 2018. Participants completed a survey including five contents: frequency and quality of contact with elderly, anxiety about aging, empathy for elderly, attitude toward elderly, and willingness to care for elderly. Data were analyzed using descriptive statistics, Chi-test, t-test, correlation, and multiple regression.

Results: Study findings showed that senior year, contact quality, and empathy were positively associated with willingness to care for older adults and taking older adult related courses and anxiety about aging were negatively associated among Korean students. On the other hand, extended family type, senior year, anxiety about aging, and attitude toward older adults were negatively associated with willingness to care for older adults among nursing students in the United States. Consequently, the combined finding from both groups showed that nursing students' willingness to care for elderly was positively associated with contact quality with older adults and empathy for them. However, nursing students' willingness to care for older adults was negatively associated with anxiety about aging and attitude toward older adults.

Implications: Based on the study findings, nursing programs need to support students to improve contact quality with and empathy for older adult patients during the clinical rotations and other relevant program activities. In addition, throughout the program, nursing faculty need to help students establish right viewpoint of aging and decrease anxiety about aging and negative attitude toward older adults.

TEACHING STRATEGIES

Evaluating Online Clinical Case Management with a Rubric for Soap Documentation

*Diane Katsma, DNP, MN, FNP, RN
Professor of Nursing
School of Nursing
California State University, Stanislaus
Turlock, CA*

Purposes/Aims: The purpose of this best teaching practice was to develop a SOAP charting rubric that would assist RN to BSN students in an online community health clinical to synthesize and report their home visit encounters.

Rationale/Background: The SOAP format is a structure that helps organize data and provides a framework for nursing students to develop clinical reasoning. Although a literature search revealed SOAP note rubrics for advance practice nursing and other health professionals, no SOAP rubric was found which focused on home visit documentation in a community health nursing clinical.

Best Practice/Approach: The SOAP rubric includes five criteria: 1) note linked to a problem (reason for the visit); 2) subjective data; 3) objective data; 4) assessment (clinical judgement or nursing diagnosis); 5) Plan (nurse interventions completed during and after the visit). Each criteria has a description for three levels and each level is correlated with a different number of points possible. Students are given instructions regarding each component of the SOAP note and an exemplar example is provided. Students then submit SOAP notes related to home visits as part of their role as case managers in community-based settings.

Outcomes Achieved: The majority of online clinical students showed improvements in their SOAP documentation scores over the 4 submitted notes. The most common deficits included incomplete data within the subjective and objective categories, mixing of subjective and objective data and the assessment category merely restating the problem instead of being a clinical judgment regarding the progression or remission of the problem. Faculty found the SOAP note to demonstrate a higher level of critical reflection and a more focused perspective of student performance in a clinical course as compared to online discussion board postings.

Conclusions: The SOAP note documentation provides an excellent “view” of the online students’ ability to case manage patients living in the community. The rubric not only gives students direction in their documentation of home visits but also provides faculty with a standardized way to evaluate online students in a community clinical. Future undertakings can focus on refining the SOAP rubric. Future research could correlate the SOAP note with critical analysis scales.

TEACHING STRATEGIES

Service Learning at a Foot-Soak Clinic for the Homeless: Developing Empathy

*Rachel Richmond, MSN, RN
Assistant Professor of Clinical Nursing
Oregon Health & Science University
School of Nursing
Ashland, OR*

Purpose/Aims: A sustainable foot-soak clinic was developed for individuals who are homeless with the dual aims of reducing barriers to care and decreasing bias among future nurses. The clinic is being integrated into a school of nursing curriculum for all junior level students, as a service-learning rotation. We are measuring the effect of the experience on students through administration of the Attitudes Toward Homeless Inventory (ATHI).

Rationale/Background: Homeless individuals face many barriers to health and health care access. Among them is lack of trust, often reinforced through biases held by members of the health care profession, including nurses (Woith, Kerber, Astroth & Jenkins, 2016). Interactions with the homeless during nursing education are most often limited to provision of care in a clinic or hospital. A foot-soak clinic shifts the power structure of an interaction between student and homeless individual, and allows for genuine human interaction. Acknowledging power imbalances and viewing patients as individuals first, then individuals who are homeless are crucial steps in providing empathetic care (Norman, Pauly, Marks & Palazzo, 2015). Nursing students and faculty at an undergraduate school of nursing launched a pilot foot-soak clinic in 2017. The students reported profound experiences. Their learning extended to therapeutic communication, resource referral, and exploration of ethics related to social justice. An equally powerful response to the clinic is occurring in the local homeless population. Initial trepidation has been replaced by an average of 8-14 individuals utilizing the service each week. Finally, the mobile clinic stationed near the foot soak is seeing individuals approach them for care after they have established trust through the less intimidating foot soaks.

Description of the Undertaking/Best Practices: Based on the success of the pilot project, grant funding was secured for a year round foot-soak clinic staffed by one faculty member and a rotation of 64 junior-level nursing students throughout the 2018-2019 academic year. The clinic runs for 4 hours a week and is seeing from 8-14 people each session. Students prepare with reading focused on empathy, power structures, and common homeless health issues. We are measuring the impact of the clinic through administration of the Attitudes Toward Homelessness Inventory, a validated tool that shows shifts in attitudes toward homeless after intervention (Foster, 2013). Nursing students are also completing an open-ended guided reflection on the experience.

Outcomes Achieved: Results from the ATHI surveys will be tabulated in June of 2019. Thematic analysis of the post-experience guided reflection will identify student perceptions about the homeless and the clinical learning experience. In addition, the on-site mobile health clinic is tracking visits that came as referrals from the foot clinic to measure impact on barriers to care.

Conclusions: Nursing education can provide experiences with marginalized populations that have the potential to mitigate the biases that directly impact health disparities (Gardener & Emory, 2018). The foot-soak project is one such endeavor.

TEACHING STRATEGIES

MEANS to ENDS: Developing Effective Nursing Dashboards

*Beth Schenk, PhD, MHI, RN-BC
Providence St. Patrick Hospital
Washington State University
College of Nursing
Missoula, MT*

*Danell Stengem, MSN, CNL, RN-BC
Providence St. Patrick Hospital
Missoula, MT*

*Tamara Powers, MSN, RN, CIC
Providence St. Patrick Hospital
Missoula, MT*

*Nicole Marks, MSN, RN, CCRN
Providence St. Patrick Hospital
Missoula, MT*

Purpose/Aims: The purpose of this study was to design and test nursing dashboards for their effectiveness in sharing complex nursing quality data.

Rationale/Conceptual Framework/Background: Nursing quality data is complex, with terminology and statistical information that many clinical nurses are not familiar with. In a complex healthcare environment, there is a large quantity of meaningful quality data, adding to the challenges bedside nurse face to access and understand these important outcomes. Nurses are concerned about their quality outcomes for care. The literature supports that having access to quality outcomes helps nurses to engage with quality improvement. However, there was little guidance in the literature for effective methods to display and present nursing quality data.

Methods: After an extensive literature review, we designed our study plan. We first interviewed 70 clinical nurses at a 250-bed hospital in the western United States. We asked them about the current dashboard, what was confusing or difficult, and what they would like to see in an improved dashboard. Concurrently, we surveyed the nurses using investigator-written questions about the importance of understanding and using quality outcomes, their confidence to do so, and their motivation to do so. We examined the interview data for main themes and created a draft dashboard for each nursing unit. We then interviewed 50 clinical nurses for feedback about the draft versions. We analyzed the second phase of interviews and applied comments to creating the final dashboards. These were posted on units and socialized through managers and councils. After 2 months, we repeated the survey about quality dashboards.

Results: Survey results showed higher scores on 100% of the questions asked, with many showing significant differences. A Likert scale from 1-5 was used. The domain of Interest/Motivation had the highest mean score of 3.94 (4=quite interested). The domain of Confidence showed the largest increase, with mean score rising from 2.74 to 3.18.

Survey results revealed similar themes, including desire for simplicity, color coding, inclusion of national benchmarks. Differences between interviewees emerged as well, some preferred paper copies, not electronic, some preferred fewer numerals and more words. A lack of understanding of quality terminology was discovered and addressed by creating a list of common terms and their definitions that accompanied the dashboards.

Implications: Nursing outcomes are important to nurses, patients and administrators. Quality data is complex, with many subtleties. The findings from this study will help nurses and quality leaders to present and share data effectively with clinical nurses. Having data available in an accessible format increased the nurses' perception of importance, confidence and motivation for understanding and using quality data. These elements may help drive engagement with quality data and improvement in quality outcomes.

Abstracts of Poster Presentations

**TRANSFORMING PRIMARY CARE NURSING
THROUGH NURSING EDUCATION,
PRACTICE, QUALITY AND RETENTION**

TRANSFORMING PRIMARY CARE NURSING THROUGH NURSING EDUCATION, PRACTICE, QUALITY AND RETENTION

Transforming Primary Care in Rural and Underserved Montana through Nursing Education

*Laura S. Larsson, PhD, MPH, BSN
Associate Professor
College of Nursing
Montana State University
Bozeman, MT*

Purpose/Aims: The purpose of the Montana NEPQR Partnership is to design a system to recruit and educate nursing students who will work to the full scope of their license in community-based primary care settings to increase access to high-performance primary care for American Indian, rural, and other underserved communities.

Background: More than 75% of the population in Montana live in areas classified as rural or frontier. American Indians are the largest minority population in Montana. The most recent estimates indicate that there are approximately 66,000 American Indians living in the state; representing 6.6% of the total population. The people of Montana experience high rates of chronic medical conditions and behavioral health issues in an environment with limited health care access, vast distances and provider shortages. Less than 15% of registered nurses work in ambulatory care and only 3% of Montana nurses are American Indian; a persistent problem for providing culturally competent care and meeting the health care needs in the state. To provide integrated, holistic and convenient care in the rural, ambulatory care setting, nursing students, their faculty and preceptors need to deliver nursing education in the same manner. Expanding undergraduate clinical education more fully into rural primary care settings provides students with the connections and experiences they need to transition into providing care in these communities after graduation.

Approach: The Montana State University College of Nursing is partnering with the Montana Area Health Education Center (AHEC), the Caring for Our Own Program (CO-OP) and tribal and statewide partners to: 1) recruit primary care-oriented undergraduate nursing students into the rural, primary care track (RPCT), 2) provide RPCT students with clinical education in community-based primary care settings and interprofessional teams, 3) deliver continuing professional development to preceptors, mentors and nursing faculty, and 4) enhance didactic and clinical training curricula to reflect priority topics in primary care including chronic disease prevention and control, trauma-informed care, interprofessional education, mental health and substance abuse. The MT NEPQR Partnership will rotate 104 students, including 15 AI students, in 10 primary care clinical sites in each year of the project. American Indian students will be provided with culturally appropriate academic support including a nursing mentor and a retention specialist.

Conclusions: Montana State University, a land grant institution, is committed to participating in the transformation of primary care in rural and frontier communities. Rethinking approaches to classroom and clinical education across the five-campus system may help increase the number and competencies of nurses electing to practice in primary care settings after graduation. The NEPQR funded programs at our College of Nursing will provide faculty, students and preceptors with the skills needed to meet growing primary care demands in rural and underserved areas of Montana.

Funding: This project is supported by the Health Resources and Services Administration (HRSA-18-012) of the U.S. Department of Health and Human Services (HHS) under UK1HP31719, Nursing Education, Practice, Quality, and Retention – Registered Nurses in Primary Care Program.

TRANSFORMING PRIMARY CARE NURSING THROUGH NURSING EDUCATION, PRACTICE, QUALITY AND RETENTION

Oregon Primary Care Transformation: Expanding Roles for Nurses on Primary Care Teams

Carla M. Hagen, PhD, MPH, RN
Clinical Associate Professor
Oregon Health & Science University
School of Nursing
La Grande, OR

Peggy Wros, PhD, RN
Professor
Oregon Health & Science University
School of Nursing
Portland, OR

Belinda Brooks, MN, RN
Instructor
Oregon Health & Science University
School of Nursing
La Grande, OR

Purpose/Aims: Oregon Primary Care Transformation (OPACT) will develop, implement, and test a model for effectively integrating registered nurses (RN) into primary care teams in Oregon. The purpose of the OPACT program is to expand the primary care nursing workforce in Oregon by recruiting nursing students and educating nursing students, nurses, and community partners statewide about the role of RNs in community-based primary care (CBPC) as essential members and leaders within primary care teams.

Rationale/Background: The Oregon Center for Nursing (OCN) recently completed a study in of all the nurses in Oregon, and found that only 10% work in medical offices or clinics. In another study (OCN, 2016), only 2.7% of new graduates across Oregon expressed interest in positions in ambulatory care settings, including primary care clinics. In Oregon, the expansion of primary care nursing practice has been uneven. While some primary care practices are incorporating nurses as case managers and leaders of interprofessional teams, may RNs continue to function in limited roles. The barriers for clinical training in CBPC include the lack of nurse preceptors working in team-based care. Many primary care practices or outpatient clinics in Oregon and nationally have hired less expensive healthcare workers to assume roles that would more effectively be delegated to RNs.

Undertaking: OPACT will be built upon the foundation of five innovative programs at the School of Nursing: the Oregon Consortium for Nursing Education (OCNE), the OHSU Campus for Rural Health, the Oregon Area Health Education Center, the Interprofessional care Access Network, and the OHSU Interprofessional Initiative to address the following needs and systemic gaps: inadequate education of nursing students and nurses about new models of primary care; insufficient numbers of nurses to fill existing primary care positions; lack of academic-practice partnerships in CBPC, particularly in rural Oregon; limited RN roles on primary care teams in Oregon; and high incidence of complex chronic illness in targeted underserved urban and rural areas of Oregon

Outcomes to be Achieved: OPACT will: 1) modify the OCNE curriculum to support the education of CBPC nurses on all OHSU SON campuses; 2) develop and expand academic-practice partnerships and student placements with nine CBPC clinics in five counties in urban, rural and frontier Oregon; 3) recruit at least 126 primary care-oriented undergraduate students for longitudinal placements in CBPC; 4) collaborate with community partners across sites to identify and disseminate models of CBPC; and 5) demonstrate that CBPC nursing practice has the potential to improve patient access, coordination of care across system, and health outcomes among patients.

Conclusions: OPACT will strive to be a fully sustainable program following the grant period. OPACT activities will result in a statewide undergraduate curriculum model that integrates and supports CBPC, faculty and preceptor development, and expansion of clinical placements and primary care partnerships throughout Oregon.

Funding: This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under 1UK1HP31728-01-00, Nursing Education, Practice, Quality, and Retention – Registered Nurses in Primary Care Program.

TRANSFORMING PRIMARY CARE NURSING THROUGH NURSING EDUCATION, PRACTICE, QUALITY AND RETENTION

Transforming Primary Care in Rural and Underserved Utah through Nursing Education

*Linda S. Edelman, PhD, RN
Associate Professor, College of Nursing
University of Utah
Salt Lake City, UT*

*Brenda Luther, PhD, RN
Associate Professor, College of Nursing
University of Utah
Salt Lake City, UT*

*Larry Garrett, PhD, MPH, RN
Project Coordinator
HealthInsight
Salt Lake City, UT*

Purpose/Aims: RNs have a role in the expansion and transformation current primary care (PC) models to meet increasing demands of an older population with more chronic conditions and behavioral health needs. The overarching purpose of the University of Utah College of Nursing Education, Practice, Quality and Retention Program (NEPQR) is to recruit and train nursing students and current registered nurses (RNs) from rural and underserved areas of Utah to practice at the full scope of their licenses.

Rationale/Background: There are 29 geographic and 39 low-income Health Professional Shortage Areas encompassing all Utah counties, with the most significant shortages in rural and underserved areas. Utah ranks 41st for the percentage of adults with an identifiable health care provider and 49th in ratio of population for PC physicians. Only 6% of RNs work in ambulatory care settings and there are fewer than 30 RNs working in 56 Utah community health clinics. In order to increase the number of PC RNs, there is need for recruitment and enhanced training of students and currently practicing RNs.

Undertaking: The goal of the Utah NEPQR is to develop academic-practice partnerships with urban and rural PC clinics in medically underserved Utah settings to provide pathways for student nurses and RNs from these areas to receive expanded training in PC including population health, interprofessional education, chronic disease prevention and control and behavioral health. Nursing faculty and preceptors will receive continuing education in current PC models and needs through facilitated webinars and PC RN learning communities.

Outcomes Achieved: We have established an academic-practice partnership with the Association of Utah Community Health to conduct needs assessments and identify gaps in current RN capacities and competencies. Enhanced training will be provided through the following programs. 1) The PC Nursing Early Assurance Program provides pre-licensure nursing students from rural and underserved areas with interprofessional PC experiences through the Area Health Education Center rural health scholars program and longitudinal leadership and clinical experiences in PC. 2) The Primary Care Emphasis track for pre-licensure baccalaureate students provides enhanced PC content through a revised curriculum and longitudinal clinical rotations in PC clinics precepted by nurses who have received focused preceptor training. 3) The Primary Care Emphasis for RN to BS students provides individualized 3-semester online programs of study for RNs working in PC. 4) Continuing education for working PC RNs will include needs assessments, facilitated webinars, monthly learning community webinars, and primary care microcertificates in behavioral health, population health, chronic disease management, patient engagement, care management, end of life, and caregiving.

Conclusions: In order to be full partners in PC transformation, there is an urgent need to increase the number and competencies of RNs working in PC. The UT-NEPQR funded programs will provide faculty and students with the skills needed to meet growing PC demands in rural and underserved areas of Utah through tailored curriculum and distance based learning activities.

Funding: This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under UK1HP31735, Nursing Education, Practice, Quality, and Retention – Registered Nurses in Primary Care Program.

TRANSFORMING PRIMARY CARE NURSING THROUGH NURSING EDUCATION, PRACTICE, QUALITY AND RETENTION

Primary Care Project ECHO: An Innovative Approach to Nursing Education

*Megan Miller, MEd, MPH
Program Operations Specialist
Biobehavioral Nursing and Health Informatics*

*Mayumi A. Willgerodt, PhD, MPH, RN
Associate Professor, Family & Child Nursing* *Diana Taibi Buchanan
Associate Professor, Biobehavioral Nursing
and Health Informatics*

*University of Washington
Seattle, WA*

Purpose/Aims: This project is proposing an innovative academic-practice partnership designed to train nursing students, newly graduated registered nurses (RNs), and experienced RNs to practice at the full scope of their license within community-based primary care (PC) teams. The project will emphasize up-to-date best practices for chronic disease prevention and management in Health Professional Shortage Areas for PC (HPSA-PC) and medically underserved (MU) and rural PC settings. Overall, the project aims to: 1.) Implement and evaluate an academic-practice partnership for creating and a sustaining a PC education initiative to enhance BSN curriculum, and provide training and continuing education opportunities for newly graduated and experienced RNs; 2.) Develop program competencies around chronic disease prevention and management, substance-use and mental health (MH) care, population health (PH), quality improvement (QI), and interprofessional collaborative practice (IPCP); and 3.) Improve the capacity of RNs to deliver PC to the full scope of their license, reduce professional isolation, and increase the number of practice-ready BSN students moving into PC residencies post-graduation.

Rationale: Washington (WA) State has a RN shortfall that is expected to grow over the next 12 years. At the same time, chronic disease rates are increasing along with a growing and aging population, amplifying the need for RNs in PC. The RN shortfall is greatest in rural WA, where the number of RNs is fewer (per 100,000 population), the average RN age is older, and chronic illness is more prevalent. However, there is a lack of alignment between current BSN curriculum, RN training programs, and the needs of PC practice in WA State. Many BSN programs do not have adequate PC curriculum to meet current needs, and students lack awareness of the full scope of PC employment opportunities, instead focusing on hospital-based positions post-graduation. Further, experienced RNs who wish to transition into PC or want to update their practice face barriers to accessing continuing education opportunities.

Approach: Through a partnership between the University of Washington (UW) School of Nursing (SON), Kaiser Permanente Washington (KP-WA), and the WA Area Health Education Centers (WA-AHEC), a novel web-based seminar series will be developed to support region-wide PC education for RNs, BSN students, and newly graduated RNs. The series will be based on the Project ECHO (Extension of Community Healthcare Outcomes) education model, and offer didactic seminars, case studies, and exemplars of team-based practice around competencies that better align with the needs of PC practice. The webinar series will help create an interactive community of learners and reduce professional isolation through the convenience of online learning. Case studies submitted by webinar participants will be used as inquiry-based learning tools as they are mentored on applications of PC practice for their clinic patients.

Conclusion: The proposed project provides an opportunity to overcome the shortfall of RNs in primary care settings across the state, particularly in R/MU communities. The web-based curriculum accompanied by mentored longitudinal ambulatory clinical practica experiences will help enhance the capacity of the current RN workforce, while developing practice-ready graduates skilled in team-based chronic illness prevention and management.

Funding: This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under UK1HP31711, Nursing Education, Practice, Quality, and Retention – Registered Nurses in Primary Care Program.

Abstracts of Poster Presentations

VULNERABLE POPULATIONS

VULNERABLE POPULATIONS

An mLearning Approach for Nurses Providing Option B+ Services in Mozambique

Jane Kim, BSN-RN, Doctorial of Nursing Practice-Family Nurse Practitioner Candidate, University of Washington; Georgina De Castro, BSN-RN, Health Alliance International (HAI), Mozambique; Florência Floriano, HAI, Mozambique; Celso Inguane, PhD, University of Washington; Justina Zucule, BSN-RN, Sofala Province Directorate of Health (DPS), Mozambique; Amélia Tomossene, BSN-RN, Beira City Directorate of Health, Beira City, Mozambique; Emília de Fátima, BSN-RN, Beira Central Hospital (HCM), Beira, Mozambique; Fernanda Alfonso, BSN-RN, Women and Welfare Services (SDSMAS), Dondo District Health, Mozambique; Sara Carimo, BSN-RN, Beira City Directorate of Health Mozambique; Debora Arão, BSN-RN, Beira City Directorate of Health, Mozambique; Maria de Rosário Sitimbele, BSN-RN, Chomoio City Directorate of Health, Mozambique; Cecília Alfredo, BSN-RN, Women and Welfare Services (SDSMAS), Gondola District Health, Mozambique; Victória Sebastião, Chimoio City, Directorate of Health, Mozambique; Lidia Domingos, BSN-RN, Chimoio City, Directorate of Health, Mozambique; Falume Chale, Beira Operational Research Center (CIOB), Mozambique; João Luís Manuel Ed, MPH, Beira Operational Research Center (CIOB), Mozambique; Sarah Gimbel, PhD, MPH, RN, University of Washington, Health Alliance International

Purpose/Aim: This study aimed to develop and evaluate a tablet-based training approach, using video-vignettes and competency-based testing, to strengthen on-the-job clinical training for nurses providing Option B+ services in public health facilities in Central Mozambique.

Background: Mozambique reports one of the lowest health worker-to-population ratios globally, with 3 doctors and 21 nurses per 100,000 people. Despite Option B+ guidelines with requisite simplification of HIV medication regimens and service delivery to promote early combination anti-retroviral therapy (cART), up to 40% of perinatal women in some areas continue to lack access to care. The current health workforce is inadequate to meet the influx of newly eligible patients or keep up with continuing training demands required for effective Option B+ implementation. Integration of mLearning into routine, supervised practices is one innovative strategy to address this gap in workforce training in Mozambique.

Methods: The study utilized a tri-phasic mixed methods approach: formative assessment to inform training modules and intervention development; testing with Option B+ stakeholders, and an assessment of the intervention's acceptability and impact. Module topics incorporated formative research findings with WHO and UNICEF core competencies recommendations, Malawi Ministry of Health (MOH) and Mozambique MOH protocols. Educational video-vignettes, written and acted by Mozambicans, were created for each module topic. Videos were followed by assessment questions. Open Data Kit (ODK) software embedded into the modules, facilitated upload of assessment scores to a central server for analysis. After the intervention, focus group discussions (FGDs) with nurses and nurse managers were carried out at three intervention clinics to assess acceptability and barriers to using this educational tool.

Outcomes: Partnership with provincial and district health departments in tool development secured strong buy-in and ownership of the intervention. The intervention group improved their Option B+ assessment 3-fold compared to the control ($p=0.04$). In sub group analysis among nurse managers, those at intervention sites demonstrated a 9-10 fold greater improvement than those at control sites. Nurses reported strong acceptance of the tablet-based clinical training approach for Option B+. Tablets were reported to be easy to use after initial training and an effective and engaging learning platform, especially when coupled with traditional supportive supervision. Content was deemed appropriate and covered either new material or areas where refresher training was needed.

Conclusion: These findings suggest that mLearning, which supplements on-site mentorship has the potential to enhance nurses' clinical competency skills, can be adapted by prevention of mother-to-child HIV transmission programs introducing Option B+ in context with limited health workforce. Real-time data from competency assessments embedded that is collected on a centralized data system can be utilized by nurse managers to identify and develop targeted improvement efforts, however training for nurse managers on this functionality needs to be provided. Adequate resources should be dedicated to ensuring that tablet training continues, while adding videos covering dimensions of the HIV care cascade not addressed in this study and improving software to ensure that uploading to the server is easy and fast for real-time evaluation of results and expeditious dissemination of resources as needed.

VULNERABLE POPULATIONS

Best Practices for Clinicians Working with Deaf and Hard of Hearing Patients

*Stacy McCarthy, BSN, MSc
Registered Nurse
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA*

Purposes/Aims: Over 11 million people in the United States are deaf or have severe hearing deficit. Deaf and Hard of Hearing (HoH) people come from all cultural backgrounds, and some identify as culturally Deaf. The deaf also use a variety of languages and tools to communicate. Because deafness and hearing loss are not readily identifiable by physical features, and because communication is essential to quality patient care, a best practices module was created to guide clinicians in providing culturally appropriate, patient-centered care for deaf patients.

Rationale/Background: The Americans with Disabilities Act (ADA) prohibits discrimination against any person based on their disability. The ADA requires hospitals and health care providers to provide assistive communication devices or interpreters to allow deaf patients or family members full access to communication. Deaf and hard of hearing people may or may not speak, use one of several signed languages, or read lips. They may use captioning, hearing amplification, signing interpreters, or other methods to facilitate communication. Which mode of communication they prefer will not be identifiable based on appearance or audiogram results. Given this great variety of communication preferences and abilities, the culturally competent health care provider must learn to assess how best to communicate with their deaf and hard of hearing patients.

Description: Cultural competency has been identified as lifelong processes, rather than knowledge that can be acquired through a single class or episode of learning. Due to the heterogeneity of people who are deaf/hard of hearing, cultural competency is an essential element to best meeting the communication needs of the patient and providing quality nursing care. Often, clinicians have never encountered a deaf person, and have no frame of reference for such an interaction. This module uses a combination of cultural competency and patient-centered care to give clinicians confidence in these interactions.

Outcomes: An educational module was created to increase awareness of the diversity of deaf/hard of hearing people and the variety of communication assistive modalities they may use. The diversity of this population and their forms of communication is illustrated to show the clinician that simply calling an interpreter may not be an option or may not be the best option for this population. The importance of a patient-centered/cultural humility approach wherein the clinician acknowledges that the patient is truly the expert on their own needs, is well-illustrated by this unique population.

Conclusion: An educational module is the initial step toward creating awareness and demonstrating how cultural competence allows the patient to fully participate in their own care. Respecting the patient's rights and providing communication in the manner that is most accessible to them sets the stage for a strong patient-clinician relationship. This patient-centered approach complies with the law and avoids negative outcomes. Further training incorporating these best practices via simulated patient-clinician interaction will enhance this skillset and provide context for future patient-centered, culturally competent interactions.

VULNERABLE POPULATIONS

Wrong Intervention or Broken System: Methodology Challenges of Jail Research

*Kelsey Hirsch, BSN, RN, PhD
PhD in Nursing Science Student
University of Washington, Seattle, WA*

Purpose: The purpose of this presentation is to present the methodological challenges faced when attempting to design an appropriate intervention for a highly marginalized, at risk, incarcerated and homeless population.

Description of Theory: The results come from dissertation work that attempted to implement a “warm hand-off” intervention with individuals who have been incarcerated four or more times in the last year and are returning to homelessness upon release. Several barriers were identified, many inhibiting the implementation of the intervention. Issues with stakeholders, challenges with jail release processing, and difficulties with state Medicaid all caused delay in implementation and potential failure of the “warm hand-off”.

Internal Consistency of the Theory: The warm hand-off was intended to remove the barriers faced by individuals trying to access health care during reintegration. The provision of transportation and help with navigation of the health care system was intended to enable individuals to successfully establish care and therefore reduce emergency room visits.

Logic Linking Theory to Research Problem: Methodological Challenges: This intervention relies heavily on stakeholder buy-in. This project required that three major systems be at the table: the county health department, Medicaid, and a local jail. None of these systems work effectively in a synergistic way, and each presented their own challenges. The second challenge related to the intervention design affected recruitment and follow up. Measures designed to ensure privacy did not enable the researcher to recruit in a completely unbiased way. Finally, there were issues related to working with Medicaid:

1. Standard processing dictated assignment of a primary care provider by the insurance company, even if that provider had not been seen before.
 1. Preemptive assignment of a PCP severely limits flexibility.
 2. Barriers were created for the new PCP related to prescriptions and referrals.
 3. Participants were required to personally call to change the PCP after visit.
2. Many individuals did not have active insurance at the time of release.
 1. Following Medicaid suspension during incarceration, it can take 48 hours or more to re-activate at release.
 2. Participants were taken to a provider’s appointment, only to find out after that their insurance was not yet active.

The following issues contributed to the challenges in navigating the health care system: Finding a provider, accepting new patients who also accepts this specific MCO for Medicaid; some locations required three patient identifiers for scheduling; some offices require the patient to personally call; providers do not allow patients to be seen at different locations; the frustration of wait times, excessive paperwork, and the difficulty of understanding the questions being asked; the lack of consistency with discharge processing and difficulties in communicating a release plan to the participants.

Conclusions: It appears that, although the underlying philosophy of the “warm hand-off” intervention is good, the challenge to effectively offer an intervention to this population is extremely difficult. There are many variables that affect the efficacy of an intervention, meaning the only hope for success comes from individualized implementation and a commitment to increased workload for jail personnel and the interventionalist.

Funding: Warren G. Magnuson Scholarship and Hester McLaws Scholarship, University of Washington

VULNERABLE POPULATIONS

A Critical Ethnography: Ethnic Identity and Mental Health in Abiquiu Pueblo's Genízaro

Ana Malinalli X Gutiérrez Sisneros, PhD, MALAS, APRN, PMHCNS-BC, CCM, AHN-BC, Interim ADN Program Director, ADN and BSN Faculty, College of Nursing/Health Sciences, Northern New Mexico College, Española, NM; Kathleen Huttlinger, PhD, RN, Committee Chair, Retired, New Mexico State University

Purpose/Aims: The Genízaro identity can be traced to Native American Plains tribes who were ransomed, held captive, and served as auxiliary troops to early Spanish colonists. Do such historical intersections of oppression and detribalization remain in the collective unconscious, affecting the mental health of descendants? To answer that query was to aim to learn further, through exploring and describing (this was the qualitative research design) life within this population.

Rationale/Conceptual Basis/Background: Changing the disparate health of ethnic groups in the U.S. was the purpose of my doctoral education, especially amongst Native American populations – this was the conceptual basis for this research. It is a fact that “The Native Americans living today are descendants of the 1% that survived the genocide that wiped out 99% of the Native population in the Americas” (D. Coyhis, personal communication, April 28, 2012). This background of survival is one way to try and understand, and celebrate, how the ethnic identity of Indigenous peoples affects, or mediates, their mental health.

The rationale of using the qualitative research paradigm of Critical Ethnography in health disparities research is viewed in this study as being of paramount importance, within the praxis of nursing, specifically, helping to provide a window into the scene of Native American mental health. “Critical” refers to the theory and education that seek to emancipate humans, to see the world in all its injustice, to change the status quo, to infuse the struggles of people fighting for social equality.

Methods: The methods used in this study involved reviews of historical records, one community focus group for recruitment, 24 semi-structured interviews, participant observation and non-observation - all conducted from 2015-2017. The informed consent process was followed, including obtaining consent, first, from the Abiquiu Land Grant Board, as the IRB required, and research subject protections were, and do, remain in place.

Results: From the audio recorded data collected from 12 male and 12 female participants aged 18-85, some 1000 codes were identified using AtlasTi software, which became thirteen major themes [such as ‘refugio’ (the Pueblo as a refuge), ‘chasing that next feeling,’ (substance abuse) and ‘querencia’ (love of homeland)] as related to the lived experience of the Genízaro, reflecting a strong relationship between ethnic identity and mental health status. Another revelation was the strong beliefs in the use of ancestral healing methods, plants, and a spiritual love of nature. This study gained a greater understanding of the three salient domains of ethnic identity (EI), Mental health (MH), and traditional medicine (TM), which were entered into a matrix analysis format to heuristically analyze and interpret results.

Implications: A corroborated and complemented picture of this unique New Mexico ethnic group has resulted, and it was found that the mental health in this Native population is sparsely addressed in the world. This research could shape future nursing research directions in the fields of critical ethnography and health, and help to create specific treatment modalities within the field of advanced psychiatric nursing, for this unique rural population living in Northern New Mexico.

VULNERABLE POPULATIONS

Child Fatality Review Boards: Increasing Collaboration in Rural America

Rebecca Gomez
Student Nurse
School of Nursing
Boise State University
Boise, ID

Max Veltman, RN, PhD, CPNP-PC
Associate Professor
School of Nursing
Boise State University
Boise, ID

Purpose/Aims: The purpose of this project was to assist a rural county in Idaho with streamlining and updating their child fatality review process to better align with national standards. Child fatality review (CFR) teams exist to review suspicious child deaths involving abuse and/or neglect or to help identify public safety hazards. They have expanded to a community health model of prevention through reviewing child deaths from birth through adolescence. This community health model of fatality review can also identify effective local prevention strategies for reducing child deaths. A collaborative approach can be a powerful tool in understanding the cause and preventability of child deaths locally; improving accuracy of vital statistics; and identifying potential legislative policies for reducing preventable child fatalities.

Rationale/Background: A CFR team investigates child fatalities in an effort to identify the causes, risk factors and preventability of child deaths within a specific community. Although several statewide reports have been published in Idaho, there remains a significant gap in data that can be useful for local (county level) efforts to prevent child fatality. In 2013, a group of local county officials began to meet regularly in an effort to better understand the issues related to the deaths occurring to children in the county. After receiving a state training grant, the team formed a partnership with Boise State University School of Nursing to increase the quality and significance of the review process. As this partnership has evolved, advanced collection and tracking of child deaths in the county continues to improve, leading to a much more comprehensive and regular reporting process.

Description: After obtaining the approval of multiple agencies as well as the university's Institutional Review Board, a comprehensive data collection process from multiple sources has been initiated and modified as needed. This has led to three annual reports being created and distributed to select county leaders. A newer, updated process is currently underway for analysis of pediatric fatalities in 2016 & 2017 for the county. In addition to an analysis of the various factors surrounding the deaths of the children residing in the county, each report contains recommendations for reducing or preventing these types of deaths in the future. These recommendations are based on national, evidence-based standards.

Outcomes: Acceptance of the new & improved CFR board data collection & reporting process has been well accepted. With assistance from the county prosecutor's & coroner's office, as well as local police and first responders, the amount and quality of the collected data has increased significantly leading to a much better understanding of multiple causes of pediatric fatalities in both 2016 & 2017.

Conclusions: This project has played an important role in helping to understand the occurrence of child fatalities at the county level. Accurate, up-to-date data increases the CFR board's ability to target limited public health resources appropriately, such as public service announcements or programs in local schools, as well as to promote legislative policy changes. Both are vital to decreasing preventable child deaths in the community.

VULNERABLE POPULATIONS

Prevention of Opiate Use Disorder in Patients with High ACE Scores in Northern NM

*Kendra S. Clawson, RN, BSN, CPN
clawsonkendra@gmail.com*

Project Aim: The aim of this scholarly project was to examine protective factors reported by a population of adults diagnosed with Opiate Use Disorder (OUD) and elevated ACEs. The project additionally sought to report demographic data and ACE score prevalence among adults diagnosed with OUD. Findings sought to inform providers of interventions to decrease OUD occurrence in rural northern New Mexico.

Background: Adverse childhood experiences (ACEs) are associated with chronic disease, various disorders, and social issues (Anda et al., 2008). Furthermore, illicit drug use is associated with ACE scores, in a dose-dependent relationship (Centers for Disease Control and Prevention, 2016; Dube et al., 2003). Based on data from 2017, 27.8 % of children in New Mexico experienced two or more ACEs, six percentage points above the national average (Bethell, Davis, Gombojav, Stumbo, & Powers, 2017). Moreover, as of 2017, New Mexico ranks last of all 50 states in measures of child wellbeing (The Annie E. Casey Foundation, 2017). Finally, 5% of the population in New Mexico (age 12+) has reported non-medical use of pain relievers in a year timeframe, 0.7 percentage points above the national average (Healthy People 2020, n.d.). New Mexico uniquely presents the opportunity for intervention due to the high number of children with elevated ACEs, as well as illicit drug misuse.

Methods: This DNP project explored the experience of patients with OUD who had ACE scores of four or greater. Via structured interviews, the project identified interventions the participants felt may have been significant in preventing their OUD. The project sought to specifically examine interventions as they relate to ACEs. The project gave a voice to those who have the lived experience of both ACEs and OUD, to synthesize strategies to address ACEs, and conceivably build resilience.

Outcomes: In analyzing the participant responses, the most prominent themes identified were: intentional communication, understanding the home environment, creating a safe space for the pediatric patient, referring to counseling, and providing increased education regarding opiates and mental health respectively. These approaches were compared to similar interventions in the literature. As a result, recommendations were identified to inform the practice of primary care providers, school nurses, and counselors who interact with children with high ACE scores in northern New Mexico (Felitti et al., 1998).

Conclusions: This project uniquely sought to understand the reflections of participants who have the lived experience of both ACEs and OUD. The analysis of these responses allowed for the synthesis and creation of a proposed framework for addressing patients who have experienced ACEs, to prevent OUD, in the healthcare and school settings. Via further investigation of this framework, and strategies recommended by the participants in this project, the healthcare community can seek to understand the ACE and OUD epidemics.

VULNERABLE POPULATIONS

Anew Language: Coming forward to Social Equality Shared by Women of Lesbian Orientation

Renee Rose Johnson, PhD(c), RN, Doctoral Student

Diana Lynn Woods, PhD, RN, Associate Professor

Pamela Cone, PhD, RN, Professor

Sheryl Tyson, PhD, APRN, Professor

*School of Nursing
Azusa Pacific University
Azusa, CA*

Purpose: The purpose of this qualitative research was to explore the coming out process for women of lesbian orientation (LO) and to examine how this process affects their health and well-being.

Rationale: Why does a person need to “come out?” Who needs to come out? What does it mean to come out? Where does a person come out? When does a person come out? How does a person come out? Why does anyone need to “come out” if they are already present? A socially enforced phenomenon to “come out” has produced misconceptions, stereotyping, unwanted prejudice, discrimination, and persecution towards women of LO. Potentially, these social issues related to this phenomenon to come out has contributed to the compromised health and well-being of women of lesbian orientation.

Methods: A constructivist approach to grounded theory guided this inquiry. Forty-eight women of LO were recruited. A total of 35 women, ranging in age from 37 to 79 years ($M = 57$ years, $SD = 11.19$), residing in California, and representing nearly all census regions and divisions of the United States completed the research. Convenience, purposive, and snowball sampling methods were used. Detailed life stories using a semi-structured guide and open-ended questions with probes, were received. An immediate connection of trust and mutuality was established; progressive reflexivity allowed the participant’s words to emerge naturally through conversation. The interview transcripts were inductively analyzed line-by-line and by data segments using a constant comparison strategy with thematic validation. Initial and focused coding was conducted. Both manual and computer data analysis were performed. Data analysis was enhanced by using ATLAS.ti (Version 8.3.16.0), Microsoft Word and Microsoft Excel 2016 (Version 1807) computer programs.

Results: These results represent a small part of the completed research. One of the central themes that emerged was family, specifically the social problems within a traditional family; a traditional family being described as a 2-Gender relationship consisting of one female and one male presumed married possibly with children. The participants spoke of a mother’s presence being dominant and a father’s participation being deficient. Women of LO have shared evidence of parental harms relating to conflict with social roles, expectations, variance with values, poor ethics, improper social conduct, and issues with responsibility.

Implications for Nursing Practice: These women of LO are not coming out, they are “coming forward” with courage, strength, vision, and leadership settling for nothing less than social equality and freedom of life. Parallel to the global Me-Too Movement, anew language has emerged through the life stories of these 35 women of lesbian orientation showing potential for increased cultural knowledge and understanding. This research will improve nursing’s cultural knowledge and understanding of women of LO. As advocates for all human beings, nurses have a great forum to be “life changers” in support of women of LO.

VULNERABLE POPULATIONS

A Best Practice Approach for Transgender Health in Primary Care

*Brittany Abeln, BSN, RN
Dual PMHNP DNP/PhD Student
The University of Arizona
College of Nursing
Tucson, AZ*

*Rene Love, PhD, DNP, PMHNP-BC, FNAP, FAANP
Clinical Associate Professor
DNP Director
The University of Arizona
Tucson, AZ*

Purpose: Describe a best practice approach for the care of transgender patients in the primary care setting, leading to optimal patient outcomes while decreasing patient stigma and discrimination.

Background: Individuals who identify as transgender are at risk for health disparities and are also at an increased risk of experiencing health care-related discrimination. In one survey of transgender individuals, 27% of participants reported experiencing discrimination in health care settings due to their transgender identity (Bradford, Reisner, Honnold & Xavier, 2013). In order to bridge this gap, it is crucial that transgender individuals receive safe, accurate and culturally competent primary care. Transgender individuals with transgender-inclusive providers are less likely to delay care (Christian et al., 2018). Nurse Practitioners are perfectly posed to provide this level of care in the primary care setting.

Brief description of Approach to Practice: Review of the literature in PubMed was conducted using the keywords: transgender, primary care, best practice, and health inequalities. The references of these articles were also examined to obtain a more thorough review of the literature. Articles chosen were specified as peer-reviewed, within the last ten years or seminal works.

Outcomes: This project culminated in a best practice approach to the care of transgender patients in the primary care setting. The recommendations include creating a welcoming and inclusive environment, obtaining a thorough health and surgical history, and understanding the health disparities that exist in the transgender population. Additionally, the entirety of the staff in the primary care setting should be trained to ensure that all members of the healthcare team are prepared to provide culturally competent care. Patients should also be screened for their gender identity, sex assigned at birth and preferred pronoun usage. The creation of a transinclusive environment – an environment welcoming to all transgender individuals – is critical.

Conclusions: Nurse Practitioners are on the forefront of providing evidence-based care. As a result, they have the ability to bridge the gap on health disparities and health care-related discrimination faced by the transgender population, thus contributing to the optimization of patient outcomes.

VULNERABLE POPULATIONS

Traditional Language and Ceremony: What's the Connection to HPV and Cervical Cancer?

*Dawn Bowker, PhD, RN, ARNP
Assistant Professor of Nursing
Iowa State University
Ames, IA*

*Julie Peila Gee, PhD, RN
Director of MSN Program
Weber State University
North Ogden, UT*

Purpose: The purpose of this study was to evaluate what Lakota women know and believe about HPV and cervical cancer and the influence of Lakota language and participation in traditional Lakota ceremony on engagement in preventive measures and at-risk sexual behaviors.

Rationale: HPV is the most common sexually transmitted infection and is responsible for more than 90% of cervical cancers. Lakota women have a higher incidence of HPV infection not preventable by the HPV vaccine demonstrating the need for continued preventive measures including Pap smear screening and condom use. Cervical cancer mortality rate for AI women on the Pine Ridge Reservation is 500% higher than the national average.

Methods: A quantitative, cross-sectional, descriptive, correlational study design was used to assess the knowledge and what Lakota women ages 18-25 (n = 89) who live on the Pine Ridge Reservation believed to be true regarding HPV and cervical cancer. The study also evaluated participation in Lakota language and traditional Lakota ceremony and engagement in preventive measures and at-risk sexual behavior. The Lakota Women and Cervical Cancer Survey was utilized to collect data. Lakota persons who served as cultural experts providing valuable input into the development and critical review of the instrument.

Results: The study revealed inaccuracies with the Lakota women's knowledge and beliefs related to HPV and cervical cancer and preventive measures. Cervical cancer knowledge and beliefs (p = .001) was a stronger predictor of preventive measures than HPV knowledge and beliefs (p = .125). In regards preventive measures and traditional Lakota ceremony, the research identified three significant findings, the Hunkapi and HPV vaccine receipt (p = .03), participation in the Isnati and condom use (p = .01), and Lakota language spoken in home and getting recommended Pap smears (p = .00). There was a strong correlation between age of sexual debut and number of sexual partners (p = .000). Active and passive participation in Lakota language was strongly correlated with later sexual debut (p = 0.001). Participation in traditional Lakota ceremonies revealed two significant findings influencing later sexual debut: Participation in the Pow Wow (p = 0.001) and the Isnati (Womanhood Ceremony) (p = 0.001) Participation in the Inipi (Rite of Purification) and later sexual debut was approaching significance at p = .055. The majority of participants reported an interest in future HPV and cervical cancer information (89.9%; n = 80) and their belief that HPV and cervical cancer information was overlooked in the educational programs (70.8%; n = 63).

Conclusions: There are inaccuracies in HPV and cervical cancer and preventive measures knowledge and beliefs among Lakota women ages 18-25. Participation in traditional Lakota language and ceremony influence sexual decision-making and participation in preventive measures.

Implications: Culture must be considered to decrease health disparities. The findings provide meaningful guidance in the development of an HPV and cervical cancer educational program with culturally relevant content and health promotion interventions on the Pine Ridge Reservation. The educational programs could involve Lakota elders, role models and ceremonial leaders.

VULNERABLE POPULATIONS

Barriers to Using Certified Interpreters: The Hispanic Bilingual Nurse Experience

*Misara Bambao, BSN, OCN, MSc
Betty Irene Moore School of Nursing
University of California, Davis
Sacramento, CA
msbambao@ucdavis.edu*

Background: The law requires that certified interpreters are available to translate information pertaining to patient's health-care. However due to perceived barrier of time, Hispanic bilingual nurses are called upon to fill this gap in communication. What is the Hispanic Bilingual nurse's perspective on being pulled from their primary assignment for the purpose of translation for patients other than their own? There is little known about what the Hispanic bilingual Nurse experience is related to the care of Spanish speaking patients. It has not been revealed how they perceive the use of their bilingual abilities in a clinical setting where certified interpreters are available.

Purpose/Aim: The purpose of this study was to gain knowledge about Hispanic Bilingual Nurses perceptions and experiences translating for Spanish speaking patients in the acute care setting. Understanding the Hispanic Bilingual Nurse experience will provide important data for improving patient-centered care and establishing policies that best serve limited English proficient patients and bilingual nurses.

Methods: Participants were recruited via snowball effect. Inclusion criteria were that they be licensed Registered Nurses currently employed in an acute care hospital in Northern California. A qualitative descriptive approach was used via one-to-one semi-structured interviews conducted in a private setting of the participants' choice.

Results: Themes emerged from these interviews including: comfort, obligation, burden, added source of stress, and a sense of honor to share the gift of Spanish to their patients.

Implications for Translation to Practice: A local tertiary hospital in Northern California currently does not offer standardization for bilingual nurses. By offering a standardized Bilingual exam and Certificate it will ensure that proper communication is taking place and Bilingual nurses will be acknowledged for their Bilingual abilities. Nurses and patients could also be paired accordingly should a nurse choose to participate in the certification process. This could eliminate the added sense of responsibility that is placed onto the bilingual nurse when asked to help translate for patients that are not their own. This is not to replace the current Certified Interpreters available; rather its purpose would be to enhance resources for Limited English Proficient patients.

VULNERABLE POPULATIONS

Integrating Diversity, Equity, and Inclusion Topics into a Research Methods Course

*M. Rebecca O'Connor, PhD, RN
Assistant Professor, Department of Family and Child Nursing
University of Washington, Seattle, WA*

Purpose: The purpose of this project was to incorporate diversity, equity, and inclusion (DEI) topics into a nursing research methods course to 1) create a more inclusive learning environment for a diverse student body and 2) encourage critical self-reflection on the experiences of marginalized populations in the context of research and health care.

Background: The American Association of Colleges of Nursing (AACN) recently called on academic nursing programs to advance DEI in order to 1) improve the quality of nursing education and 2) prepare nurses to effectively care for an increasingly diverse American population. Specifically, AACN states that:

When diversity is integrated within inclusive educational environments ... assumptions are challenged, perspectives are broadened, and socialization across a variety of groups occurs, resulting in intellectual and cognitive benefits for all learners (AACN, 2017, p.1). However, creating truly inclusive learning environments for a diverse group of students with a wide range of experiences is challenging. This is especially true for large courses with content that many students widely consider 'dry', such as research courses.

Methods: This project sought to create a more inclusive learning environment for diverse undergraduate nursing students in a large (n=96) research course through readings and discussions on various DEI topics (e.g. racism, trans health) and promote critical self-reflection through activities examining the experiences of others whose identities may differ from their own. In addition to research-related activities, DEI-specific learning activities included: 1) assigned research articles used to discuss both weekly research topics (e.g. study samples) and DEI topics (e.g. race-based medicine/BiDiI [isosorbide dinitrate/hydralazine HCL]) in-class; 2) online after class reflection activities (e.g. 'Conversations on Race' short films) and related discussion board posts on the weekly DEI topic; and 3) in-class debriefs on the DEI-related discussion board posts at the beginning of the following class.

Outcomes: Students expressed gratitude for creating a more inclusive learning environment ("Thank you for advocating for underrepresented groups!"), shared experiences of personal reflection/growth ("We talked about a lot of issues that encouraged us to think outside of our biases and consider all potential perspectives"), and provided positive feedback on two questions focused on inclusivity ("The instructor showed respect for all students in this course", "The instructor provided an environment in which I felt comfortable discussing issues about diversity"; mean rating of 4.7/5.0 for each question) on the research course evaluations.

Conclusions: AACN, the National Academy of Medicine, and others have recently highlighted the need to promote diversity and inclusivity throughout health sciences education to address persistent inequities in health and health care. Thus, DEI topics should be integrated throughout all nursing curricula—including research courses. The above methods are one way to successfully incorporate DEI topics into a research course that results in a more inclusive learning environment and promotes personal reflection regarding the experiences of others. Future projects are needed to provide educators with additional examples of how DEI can be successfully integrated throughout nursing curricula to promote inclusive learning environments and critical self-reflection among learners.

VULNERABLE POPULATIONS

A National Survey of Complementary Medicine Use for Treatment among Asian Americans

Rhea Faye D. Felicilda-Reynaldo, EdD, MAN, MSED
Associate Professor, School of Nursing and Dental Hygiene
University of Hawaii at Manoa, Honolulu, HI, rf@hawaii.edu

Soyung Choi, MS
Biostatistical Analyst, Dept. of Complementary
and Integrative Medicine, University of Hawaii
John A. Burns School of Medicine

Susan D. Driscoll, PhD, MPH
Assistant Professor
School of Nursing and Dental Hygiene
University of Hawaii at Manoa

Cheryl L. Albright, PhD, MPH
Professor, School of Nursing and Dental Hygiene
Myron B. Thompson School of Social Work, University of Hawaii at Manoa

Purpose/Aims: This analysis of a national dataset (NHIS) investigated the prevalence, patterns of use, and predictors of complementary and alternative medicine (CAM) for the treatment of health conditions by five Asian-American (AA) subgroups.

Background: Asian culture and tradition emphasize the use of Eastern medical systems, which provide a holistic approach to treating illnesses, and AAs exposed to both Eastern and Western health approaches are more likely to engage in medical pluralism, defined as “the adoption of more than one medical system in terms of health beliefs, behaviors, or treatments.” Treatment of a health condition with CAM is a type of medical pluralism. Previous studies have shown AAs, versus non-Hispanic whites, were less likely to report use of herbal therapy to treat health conditions. Yet, Eastern alternative medicine systems, including use of herbal therapies, have been and are still used in the treatment of many diseases. Inconsistencies between studies lead prompted hypotheses about whether AAs are primarily using conventional medicine for treatment of disease/symptoms, or could they be underreporting use of CAM for treatment?

Methods: We conducted a secondary analysis of the 2012 National Health Interview Survey (NHIS) adult CAM data from 2,224 AAs from 5 subgroups (i.e., Chinese, Asian Indian, Filipino, and “Other Asians”). Other Asians included Japanese, Korean, Vietnamese, and other Asian ethnicities. Sociodemographic/predictor variables were estimated using weighted percentages and standard errors. Rao & Scott’s adjusted Pearson’s chi-squares tests determined AAs subgroup differences in sociodemographic variables, CAM use, and health conditions for which CAM was used as a treatment. A multivariable logistic regression model for use of CAM for treatment of health condition was fitted to examine predictors of CAM use for treatment of health conditions.

Results: Approximately 72% of AAs reported CAM use with significant differences found between AA subgroups in the use of alternative medical systems, biologically-based therapies, and manipulative- and body-based therapies. Around 9% of AAs reported using CAM to treat health conditions, with most using it for a chronic condition. Significant differences were found between AA subgroups in their use of CAM to treat any health condition, and specifically for acute versus chronic conditions. Significant predictors of CAM use by AAs included: age (>65 years), high educational attainment (college or 3 bachelor’s degree), health status (poor to good), and a specific Asian subgroup (“Other Asians” vs. Filipino). Significant predictors of CAM use for treatment of health conditions were also found within each AA subgroup.

Implications & Future Research: Healthcare providers and nurses should consider simultaneous or preferential CAM use among their AA patients to improve understanding of cultural preferences, address potential health care access issues, and discuss medical risks due to potential interactions between CAM and Western medicine. Further investigation of this and other forms of medical pluralism are needed among AAs, to explore potential confounders and risks such as underreporting, schedule/dosage of CAM, cultural influences, and impact of CAM on adherence to standard health care treatments.

Funding: This work was partially supported by the National Institutes of Health (NIH) under grants U54MD007584 and U54MD007601. The content is solely the responsibility of the authors and does not necessarily represent official views of NIH.

VULNERABLE POPULATIONS

Sustainable & Replicate (able) Foot and Wound Care Clinic for Homeless of Alaska

*Michele R. Burdette-Taylor, PhD, MSN, RN-BC, CWCN, CFCN
School of Nursing, College of Health
University of Alaska Anchorage
Anchorage, AK*

Purpose/Aims: The purpose of development and delivery of this project was to bring awareness of the unique needs of the homeless of Alaska, while fostering empathy among University of Alaska college of health students. The design is an interprofessional academic service-learning opportunity to transition students to a semi-autonomous role in the community while developing foot and wound clinical skills and to integrate social justice competency and citizen behaviors.

Rationale/Background: The rationale was to serve the poor. To offer an inter-professional and service learning opportunity for students. The background included the fact that Alaska ranks number 9 in the United States for homelessness. There are over 1300 documented homeless in Anchorage with 49-72 % being Alaska Natives. The severe weather, terrain, physical needs, and access to health care are major barriers and challenges for survival.

Description: Foot and wound care issues are a significant issue in Alaska due to below zero temperatures, moisture in summer and winter, and limited access to health care specifically due transportation and providers willing to serve the poor. Exposure leads to frostbite, infections, wounds, and amputations. By developing a team of medical, nursing, nurse practitioner, and social worker students, with community partners a clinic was conducted two to four times per month to meet the foot and wound care issues.

Approach: The initial approach and inspiration was conducted after a review of the literature and an opportunity to challenge a group of eight senior nursing students to focus their capstone project on the homeless population. A project ensued with the objective to discover what the homeless wanted health care providers to know about them. Project HOPE: Hearing Other People's Experiences outcomes were a success by offering a student team approach of interviewing the homeless while offering basic foot care.

Methods/Process: After being awarded two grants, a systemic process was developed in phases to meet the objectives, recruit students, faculty, and community members, and conduct the training to offer the foot care clinic competently, safely, and systematically. There were five major phases: Phase 1 preclinical training and organization with policies, Phase 2 focused on immersion of foot and wound care clinic and offering didactic content specific to board certification in foot and wound care for students and community partners, Phase 3 incorporated data collection to include demographics, and results of lower extremity assessment, intervention, education, and referral, Phase 4 conducted written and oral evaluations, reflections of civic learning, personal and professional growth, and Phase 5 focused on personal, professional educational, and clinical outcomes, results, and required report for grants.

Outcomes: Over the two years since the project was initially offered, five groups of senior students have focused their capstone project on a different aspect of homelessness in Alaska to include perspectives about homelessness, hygiene needs, adverse childhood events, and sexual health needs. Six medical, two nurse practitioner, and two baccalaureate students, and 3 community partners enrolled in the foot and wound care courses for national board certification. Three have accomplished completion of course/s requirements and national certification. Physical and mental health care have been provided for over 100 homeless individuals in two settings. Care included complementary therapies to include aromatherapy, massage, therapeutic touch, and compassion. Students articulated the opportunity to work inter-professionally and as a service-learning project more rewarding than other "ways" of knowing. Multiple opportunities for giving back to the community through donation drives, incorporating youth groups to tackle a project such as building and setting up boot dryers at the clinic and community partners offering resources and services. Undergraduate and graduate participants have been able to document, present at local conferences and publish their manuscript in the Journal of Service Learning and Undergraduate Research throughout each of the phases.

Conclusions: This project was multifaceted that offered many in the Anchorage area opportunities to learn, participate, donate, and grow personally and professionally. The faculty at the University of Alaska are challenged to offer inter-professional academic service-learning on a regular basis. Public providers, school and parish nurses, students and faculty worked side by side to achieve the goals and objectives.

Funding: Wheatridge Ministries Grant; University of Alaska Anchorage, Community Center Engaged Learning Grant

VULNERABLE POPULATIONS

Mental Health Needs in Elementary School Children in China

Yuqing Guo, PhD, RN

Assistant Professor

Sue & Bill Gross School of Nursing

University California, Irvine (UCI)

Anna Hsu, PhD

Institutional Research Analyst

Pitzer College

Claremont, CA

Hongyan Guan, MD, PhD

Department of Early Childhood

Development, Capital Institute of Pediatrics

Beijing, China

Purpose: The objectives of the study were to describe mental health needs in elementary school children in China, and to examine the risk factors for the mental health problems in these children.

Background: Mental health in children is critically important because emotional and behavioral problems can lead to impaired social functioning, poor academic achievement and suicidal attempts in adolescence or adulthood. While there is considerable evidence about children's emotional and behavioral health in Western countries, less is known about mental health problems in children in China.

Methods: This study adopted a cross-sectional design. We recruited 1,922 children in two elementary schools in Beijing, China. The gender ratio was almost equal with 46.2% girls to 53.8% boys. There were 73.4% of children who lived in nuclear families (two biological parents and their children), 21.9% in extended families (two biological parents, grandparents and their children), and 2.9% in single families (one biological parent and his/her children). As to maternal education, 14.6% of mothers did not complete high school, 25.6% had some college education, 45.9% had a bachelor's degree, and 13% completed graduate education. Parents completed the Revised Child Anxiety and Depression Scale -47 (RCADS-47) assessing both depression (Cronbach's $\alpha = 0.76$) and anxiety (Cronbach's $\alpha = 0.88$). We used the SPSS 25 for statistical analysis. Percentages were calculated to describe prevalence of mental health problems. One-way Analysis of Variance (ANOVA) was used to examine whether mental health problems differed significantly with regard to grade, gender, family living status and maternal education.

Results: The prevalence of parent-reported depression and anxiety was 20.0% and 17.1% respectively. Fifth and six graders were found to have significantly higher rates of depression and anxiety than 1st through 4th grade children ($ps < 0.001$). Depression and anxiety in boys were significantly greater than counterparts in girls, respectively [61.30 (6.73) vs. 58.71 (5.82), $p < 0.001$; 62.49 (5.95) vs. 56.63 (5.31), $p < 0.001$]. Children living in a single parent household had higher depression and anxiety compared to children living with both parents [64.23 (12.11) vs. (59.94), $p < 0.001$; 62.92 (11.30) vs. 59.67 (6.10), $p < 0.001$]. Low maternal education was a risk factor in that those children with mothers who completed high school or less had higher rates of depression and anxiety than children with mothers who had some college education or more [62.24 (8.08) vs. 59.71 (6.05), $p < 0.001$; 61.44 (7.72) vs. 59.46 (6.03)], $p < 0.001$].

Implications: The high rates of depression and anxiety suggest the need for development of an early prevention and intervention to promote mental health in children in China.

Funding: The project described was supported by National Health Family Planning Committee.

VULNERABLE POPULATIONS

Systematic Review of HPV-Related Research Targeting Chinese Young Adults

Angela Chia-Chen Chen, PhD, RN, PMHNP-BC
Associate Professor
Arizona State University
College of Nursing & Health Innovation
Phoenix, AZ

Soojung Jo, MSN, RN
PhD Student
Arizona State University
College of Nursing & Health Innovation
Phoenix, AZ

Elizabeth Reifsnider, PhD,
FAANP, FAAN
Professor
Arizona State University
College of Nursing & Health Innovation
Phoenix, AZ

Purpose: We conducted a systematic review to synthesize evidence regarding factors associated with HPV vaccination in Chinese young adults.

Background: The Human papillomavirus (HPV) infection is the most common sexually transmitted infection in young adults globally. The high morbidity, mortality, and economic burden attributed to cancer-causing HPV call for researchers to address this public health concern. HPV has been found to be highly associated with multiple cancers in both males and females, and HPV vaccines provide hope to reduce disparities in HPV-related diseases. Two HPV vaccines were approved by the Chinese FDA since 2016, however, limited research has been conducted to understand factors associated with HPV vaccination in Chinese young adults.

Methods: A systematic review was conducted through a comprehensive search of databases (e.g., PubMed, CINAHL, PsycINFO, Google Scholar, etc.). Studies were included if they (1) examined factors associated with HPV vaccination in Chinese young adults aged 17-26; (2) were conducted in China including Hong-Kong; (3) were published in English; and (4) were published during 2013-2018. Three researchers independently reviewed eligible articles and achieved 100% consensus for studies to be included in the synthesis.

Results: We identified 14 empirical studies that met the inclusion criteria. Nine of them were conducted in Mainland China and five in Hong Kong. Majority (n = 12) were cross-sectional survey studies, one was qualitative study, and one intervention study used pre- and posttest quasi experiment design. About 43% (n = 6) studies focused on females only, 29% (n = 4) target medical students only, and only 14% (n = 2) studies included a theoretical framework. All studies examined participants' knowledge of HPV and vaccines and 71% examined factors associated with vaccine acceptability. Two studies conducted in Hong Kong reported a wide range of vaccination rate ranging from 0.5% (males) to 47.2% (females who received at least one shot). While all studies reported low level of HPV-related knowledge, factors associated with higher vaccine acceptability included better knowledge (n = 10), more concerns about HPV infections or related diseases (n = 4), and being female (n = 4). Concerns about the high cost (n = 3) and vaccine safety (n = 3) were negatively associated with vaccine acceptability.

Implications: Findings from this synthesis suggest a low level of HPV-related knowledge and suboptimal vaccination rate in Chinese young adults. Theory-based interventions addressing knowledge and other influencing factors (e.g., cost coverage), and involving both males and females are urgently needed to increase vaccine acceptability and uptake in Chinese young adults.

VULNERABLE POPULATIONS

Depression and Suicide Ideation Severity and Sleep Problems: A Community Sample of Adolescents

*JaHun Kim, PhD, RN
Assistant Professor, College of Nursing
Seattle University, Seattle, WA*

*Elizabeth McCauley, PhD
Professor
Psychiatry and Behavioral Sciences
University of Washington
Seattle, WA*

*Ann Vander Stoep, PhD
Professor
Epidemiology
University of Washington
Seattle, WA*

Purpose: The purpose of this study is to explore whether there are different associations between the severity of depression and suicide ideation, and sleep disturbances. The goals are to examine whether greater sleep disturbances predicted more severe symptoms of depression among adolescents with and without diagnosis of depression; and to test whether greater sleep disturbances predicted higher level of suicide ideation among adolescents with and without history of suicide attempt at 12th grade.

Background: Researchers have established sleep disturbances as significant risk factors for depression and suicide. Adolescents with insomnia report more symptoms of depression as well as suicide risk. Adolescents in the US showed that insomnia comorbid with mood disorders (21%). Youth with insomnia symptoms showed significantly high risk of suicide. Studies with Chinese adolescents showed that sleeping less than 8 hours at night and frequent nightmares were associated with increased risk of suicide attempt. Chinese youth also reported that poor sleep quality and frequent nightmares were associated with greater risk of non-suicidal self-injury.

Method: Data for this study was from the Developmental Pathways Project (DPP), a community-based longitudinal study of depression and conduct problems in adolescence. The current study included 428 students from T7 (at 12th grade) who reported the CBCL sleep items. The student participants of the current study were 202 (47.2%) girls and 226 (52.8%) boys. The mean age of participants at T7 was 17.63 years (SD = 0.58). Sleep disturbances were measured using six Child Behavior Checklist (CBCL) sleep items. Depression was measured using the Mood and Feelings Questionnaire (MFQ). Suicide ideation was measured by 3 items from MFQ. We did not include sleep and suicide items from MFQ in our final analyses to reduce increased magnitude of correlation among depression, sleep, and suicide ideation.

Results: More sleep disturbances were significantly associated with greater depressive symptoms in no- depressed (ND: $rs(340) = 0.45$ $p = .00$) and depressed groups (DP: $rs(88) = 0.56$, $p = .00$). More sleep disturbances were significantly associated with greater suicide ideation in no-attempters (NA: $rs(400) = 0.21$, $p = .00$) and attempters (AT: $rs(26) = 0.48$, $p = .01$). More sleep disturbances were associated with depression severity, and more sleep disturbances were associated with severity of suicide ideation in total sample, $rs(426) = .48$, $p = .00$, $rs(426) = .24$, $p = .00$ respectively. Sleep disturbances were strongly correlated with severity of depressive symptoms among adolescents with diagnosis of depression than without depression ($Z = -4.43$, $p = .00$). Sleep disturbances were strongly correlated with severity of depressive symptoms among adolescents with history of suicide attempt than without it ($Z = -3.65$, $p = .00$).

Implications for Translation to Future Research: Future research warrants developing sleep intervention strategies for adolescents with depression to reduce its severity and for adolescents without depression as a preventive approach. In addition, sleep disturbances needs to be included in suicide assessment and prevention efforts to identify at risk youth with and without history of suicide attempt.

Funding: The developmental Pathways Project, which was funded by a grant (R01 MH63711 and R01 MH079402) from the National Institute of Mental Health and Drug Abuse (principal investigators A.V.S and E.M.).

Abstracts of Poster Presentations

WOMEN'S HEALTH

WOMEN'S HEALTH

Causes of Discontinuation of Infertility Treatments in Utah

*Camrey Tuttle
Student Researcher
College of Nursing
University of Utah
Salt Lake City, UT*

*Sara Simonsen, CNM, PhD
Adjunct Associate Professor
College of Nursing
University of Utah
Salt Lake City, UT*

Purposes: In response to legislature's desire to better understand the impact of infertility on Utahans, the survey-based Fertility Experiences Study (FES) was performed to characterize the attitudes of those affected by such circumstances. The goal of this research is to analyze burdens experienced by those participating in infertility treatments and the translation of such into discontinuation of these treatments by the couple prior to achieving successful conception.

Background: Previous works on this topic have shown discontinuation rates for fertility treatments of approximately 33.1%, with the most common causes from least to most common psychological/emotional distress; no faith in procedure; and medically advised to discontinue.

Methods: This study utilizes the FES data to discover Utah specific data on discontinuation of fertility treatments and main reported reasons. Statistical analysis was performed using the software Microsoft excel to organize and compare participant responses.

Results: Of the total study participants, 782 reported use of at least one fertility treatment (alternative treatments, medications, artificial insemination, or *in-vitro* fertilization). Of these participants, 144 (10%) reported that treatment(s) were discontinued before successful conception was achieved. Many participants reported that multiple reasons contributed to treatment discontinuation. The most prevalent reasons included the following study choices: patients felt like treatment was not working (56%), monetary cost (50%), and physical burden (49%). In addition to these factors, the emotional consequences of fertility treatments were analyzed. Increased stress levels and other emotional crisis were reported by a majority of participants, with the most impacted area being participant relationship.

Implications: The results of this study are significant in that they lead to increased understanding of the specific trials of those with fertility problems. This understanding allows for the creation of more informed policies and legislation regarding the clinical management of these patients to ensure that the fertility treatments offered can be performed in the most effective and patient-centered manner to assist the couples in achieving their reproductive goals.

WOMEN'S HEALTH

Barriers to Accessing Maternal Health Care Services for Women in Central America: A Systematic Review

*Ashley Younger, MPH, MSN, RN
Doctoral Student
University of California, San Francisco
School of Nursing
San Francisco, CA*

Purpose: The purpose of this systematic review of quantitative research studies was to identify barriers to accessing maternal health care services for women in Central America.

Background: Central America is a geographic region of seven countries in Latin America: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama. In contrast to other regions of Latin America and the Caribbean, many of the countries in Central America include large proportions of the population who are indigenous as well as rural communities that represent unique social, linguistic and cultural barriers that need to be understood in order to address health disparities. None of the Central America countries reached the 2015 UN Millennium Development Goal #5 for country targets to reduce maternal mortality. Due to the diverse demographic landscape, barriers to accessing maternal healthcare are complex. Synthesizing the evidence-based studies on barriers to quality maternity care in Central America is essential to equip global health programs achieve the Sustainable Development Goals by 2030.

Methods: PRISMA 2009 guidelines were used for this systematic review. Keyword/MESH term searches were conducted using two online databases: PubMed and EMBASE. Inclusion criteria were quantitative studies with a publication date between January 1, 2008-January 26, 2018, focused on women in Central American countries that examined barriers and/or factors related to accessing maternal health services.

Results: The 6 studies that met the inclusion criteria were either case-control or retrospective cohort studies conducted in Guatemala, Honduras, Panama and Nicaragua. Significant barrier factors were divided into structural (availability, accessibility and affordability) and individual (accommodation, acceptability) categories. Statistically significant ($p < 0.05$) structural factors contributing to access barriers included: antenatal care, community health workers, language communication, vehicle ownership, distance to facility, area of residence and extreme poverty. Individual barrier factors that were statistically significant included choice of birth position, satisfaction with last delivery, Spanish fluency, ethnicity, parity, education/literacy and perceived need for maternal health services.

Implications: This systematic review highlights the complexity of factors that contribute to the barriers for maternal health care access in several Central American countries. The main findings centered on the importance of the acceptability of maternal health services by improving language communication, cultural sensitivity and perceived need for care. Quality of care also emerged as a crucial factor for accessing maternal health care. Considering nurses are on the front lines delivering care in most low-income settings, these conclusions are particularly relevant to nurses interested in global maternal health programming and interventions. Implications for future research include prioritizing mixed methods research to deepen our understanding of the barriers and developing conceptual models and instruments to measure perceived quality of care for women in Central American indigenous communities.

WOMEN'S HEALTH

Association between Perinatal Substance Use and Depression/Anxiety: A Scoping Review

Ryoko Pentecost, MN, RN, PhD Student
Gwen Latendresse, PhD, CNM, FACNM
Tessa Hamilton, BSN, RN, DNP Student
Kaitlyn Jones, BSN, RN, DNP Student

College of Nursing, University of Utah, Salt Lake City, UT

Purpose/Aims: The primary objectives of this systematic scoping review were to identify, evaluate, and report published literature regarding associations between perinatal substance use (PSU) and perinatal depression and anxiety (PDA), and any related maternal/newborn outcomes. The review also identifies research gaps that inform the development of future studies intended to improve the care of childbearing women.

Rationale/Background: PSU and PDA are common in women during their reproductive years. According to the World Health Organization, PDA affects 15.6% of women during pregnancy and 19.8% during the postpartum period. The National Center on Substance Abuse and Child Welfare reported that approximately 15% of infants are affected by prenatal alcohol or illicit drug exposure. PSU and PDA contribute to adverse outcomes, such as being small for gestational age, preterm birth, difficult neonatal transition, and impaired child growth and development. However, the outcomes related to PSU and PDA are typically investigated independently without consideration for the associations that may exist between the two. Limited evidence exists regarding the relationship between PDA and PSU.

Methods: This scoping review included search of the research literature in PubMed, the Cumulative Index to Nursing and Allied Health Sciences (CINAHL), MEDLINE, and EMBASE. Search terms included: maternal mental health, maternal, substance use, substance abuse, postpartum, perinatal, mental health, opioid, alcohol, methamphetamine, addiction, dependence, pregnancy, depression, anxiety, bipolar disorder, post-traumatic stress disorder (PTSD). A search and review protocol was developed based on the Joanna Briggs Institute (JBI); Methodology for JBI Scoping Reviews, and the Arksey and O'Malley framework described in the JBI was used. A scoping review is an approach of analyzing literature and it ultimately aggregates knowledge, leverages several study designs, and summarizes the findings. Scoping reviews emphasize findings on topics that have limited studies. Inclusion criteria: all peer-reviewed studies published between 2008-2018, primary research, all geographical areas, in English. Exclusion criteria: Non-English language, postpartum psychosis, commentaries, and non-systematic reviews.

Results: A total of 10 publications were identified and evaluated for study quality and level of evidence. The complete results of this scoping review will be presented at the Western Institute of Nursing conference in 2019.

Implications for Practice and Further Research: Most women will reduce or eliminate substance use early on in their pregnancy. However, some women are unable to stop their substance use due to dependence or addiction. Perinatal depression, anxiety, and other mental health conditions can also present a major challenge to a woman's ability to address substance use. It is imperative for these women to receive care that addresses both PSU and PDA in order to optimize pregnancy and child health outcomes. Comprehensive multi-disciplinary services are needed to address the complex healthcare needs of patients with mental health conditions and substance dependency, in addition to their physical health, socioeconomic, and family needs. The results of this study will contribute to identifying the relationships between two serious issues pregnant women may experience, find gaps in knowledge, guide future research studies, and improve the health outcomes for childbearing women and their families.

WOMEN'S HEALTH

Galactagogue Usage and Breastfeeding Self-Efficacy

*Michelle T. Lee, PhD(c), RN, IBCLC
Lactation Consultant
Maternal Child Health
Kaiser Permanente
San Diego, CA*

*Mary Barger, PhD, CNM, FACNM
Associate Professor
University of San Diego
San Diego, CA*

Specific Aim: The aim of this study is to examine the effect of galactagogue usage on mothers' breastfeeding self-efficacy score and breastfeeding duration goal.

Background: It is well established that breastfeeding is beneficial to both mothers and infants. However, the current percentage of mothers breastfeeding at six months and one year are well below the Healthy People 2020 objectives. Research has shown 30-80% of mothers perceive their breast milk production as insufficient, which is the most common reason for early cessation of breastfeeding and introduction of galactagogue supplements. Therapeutic usage of herbal and pharmaceutical galactagogues has long been believed to help mothers increase breast milk production despite a lack of clear, supporting evidence.

Methodology: A descriptive, cross-sectional, correlation study design will be used to examine the relationship between usage of herbal galactagogues, maternal breastfeeding self-efficacy, and maternal breastfeeding duration goal. Subject recruitment will occur between September and December 2018 from a convenience sample of 200 mothers. Recruitment will take place at San Diego South Bay pediatricians' offices when mothers present for infants' well newborn visit between one to three weeks postpartum.

Instrument: A one-time study survey comprised of Breastfeeding Self-Efficacy Scale – Short Form (BSES-SF) with a Cronbach's alpha of 0.96, Perceived Insufficient Milk Questionnaire (PIM) with a Cronbach's alpha of 0.90, and Demographic Questions will be administered in both English and Spanish. Frequency distributions of covariates, basic descriptive statistics of the categorical and continuous variables, and crude analysis with an unpaired t-test on total BSES-SF and PIM score will be performed. Based on these results, regression modeling on galactagogue use and self-efficacy will be performed.

Results: Pending

Implications: The results of this study may help to address the gap in knowledge of whether galactagogues can be used to improve mothers' breastfeeding self-efficacy and ultimately increase breastfeeding duration.

WOMEN'S HEALTH

Understanding the Impact of a Perinatal Mood and Anxiety Disorders Phone Support Line

*Diana Nguyen, BSN, RN
PMHNP DNP Student
University of San Diego
San Diego, CA*

*Semira Semino-Asaro, PhD, APRN
Associate Professor
University of San Diego
San Diego, CA*

Purpose/Aims: The purpose of this evidenced-based practice project is to increase the amount of data gathered by a local perinatal support organization by analyzing the callers' demographics through phone line surveys and using the information to expand resources and access to care for mothers with perinatal mood and anxiety disorders (PMADs).

Rationale/Background: Depression affects women of reproductive age at rates twice as high as men in the same age range. Postpartum depression affects one in every seven women and anxiety is estimated to range from 13-21% in new mothers. Depression and anxiety are more likely to develop in women during the first year after childbirth. PMADs are associated with increased risks of maternal and infant mortality and morbidity. These rates are expected to rise given that 50% of mothers fail to seek mental health treatment for symptoms of PMADs. The demographic data collected will provide a better understanding of the population utilizing local phone line resources.

Undertaking/Best Practice/Approach/Methods/Process: This project is guided by the John Hopkin's Model which utilizes the three-step process of practice question, evidence, and translation. Data will be collected from the perinatal support organization's phone line service by trained volunteers who interact with the callers. The callers are typically mothers and spouses or family members who utilize the phone line on behalf of someone they know with PMADs. The volunteers will ask an additional five questions that will be added to the pre-existing survey used to collect caller information. The questions being added to the survey address how callers heard about the perinatal support organization's phone line resource, language, age range of mothers calling, the number of children the mother has and if applicable, if the mother had any symptoms of PMADs with prior children. The intervention consists of analyzing the data gathered, determining how the data is useful for identifying gaps in access to care, and presenting the data to the organization.

Outcomes Achieved/Documented: Data collection is in progress and results will be available for the poster presentation.

Conclusions: Final results and conclusions will be available at the time of presentation. This should provide an understanding of the perinatal support organization's phone line service callers and can facilitate open discussion of implications concerning PMADs.

WOMEN'S HEALTH

Telephone Follow Up for Obstetrical Triage Visits

*Ann Grimshaw, RN, MSN, CNS
Clinical Nurse Specialist
Doctorate of Nursing Practice, Student
University of San Diego, School of Nursing
San Diego, CA*

Purpose: To reduce a patient's knowledge deficit related to plan of care after an unscheduled obstetric triage through follow up phone calls.

Rationale and Background: Up to 75% women during their pregnancy will present to an unscheduled visit in obstetrical triage with questions about their own health and the health of their unborn newborn. The majority of these visits will result in discharge from obstetrical triage prior to delivery of the newborn. Patients who leave triage can display a knowledge deficit in the expectation in plan of care for needed follow up or not have the resources to available to fully complete the plan. This can lead to confusion for the patient and primary obstetrical provider, along with dissatisfaction of care after the visit. A follow up phone call can ensure proper follow up is coordinated along with clarification of the plan of care put in place from the unscheduled visit. Traditionally the response from an unscheduled visit is to leave responsibility with the patient to call their primary obstetrical provider for follow up and review of the visit and any testing preformed.

Best Practice: Daily review of all obstetrical unscheduled visits at a major metropolitan tertiary care center by a team of obstetrical trained Registered Nurses. Patients identified from predetermined criteria to require follow up care are contacted by their primary obstetric care clinic nursing staff. The goal of the calls will be to review the visit with the patient in addition to coordinating needed follow up care. Patients will be asked three questions related to their understanding of the obstetrical visit, these questions will be based on five point Likert scale. These questions will be asked at the beginning of the call and again at the end of the call. This will gauge the reduction of knowledge deficit from the patient about their recent visit.

Outcomes: After a three-month period, it was found that patient knowledge deficit decreased and patient's reported increased understanding of the expected follow up plan of care after an obstetrical triage visit. It was also noted that an increase of 25% in the needed follow up visits with primary obstetric care providers were identified and booked as appropriate.

Conclusion: Follow up phone calls are shown to improve the overall understanding and satisfaction with the obstetrical triage visit, providing guidance to the obstetric patient coordinating follow up care and supporting a better understanding of recommendations of the obstetrical triage discharge plans. Obstetric patients who are released from an unscheduled visit prior to delivery are recommended to receive follow up care from their primary obstetric provider. Patient contact will support coordination of care and decreased knowledge deficit in regards to the obstetrical patient's awareness of the maternal and fetal health.

WOMEN'S HEALTH

A Phenomenological Study of the Meaning of Antepartum Bed Rest: Beyond Post-Partum

*Gwendelyn S. Orozco, PhD, RNC-OB
Assistant Professor, Assistant Director
College of Graduate Nursing
Western University of Health Sciences
Pomona, CA*

Purpose: The purpose of this study is to explain the meaning of the Antepartum Bed Rest (APBR) experience in mothers who are more than six weeks postpartum.

Research Question: What is the meaning of the antepartum bed rest experience for mothers who have surpassed six-weeks postpartum?

Background: Research confirms that APBR has a negative emotional and physiological impact on mothers during their hospital stay and postpartum period. Some of the sensory disturbances include depression, fatigue, and the inability to concentrate (Maloni & Park, 2005, Dunn, Handley, and Shelton, 2007). Physiological changes such as cardiovascular deconditioning; diuresis with fluid, electrolyte, and weight loss; bone demineralization; increased heart rate and blood coagulation; heartburn and reflux; constipation; and glucose intolerance; (Maloni & Park, 2005). The current state of the science provides inadequate articulation of the meaning of the antepartum bed rest experience for mothers who are more than six weeks postpartum.

Methods: This question was answered by using Van Manen's thematic analysis of the experience which describes and explains the meaning of the experience of APBR. A qualitative interpretive phenomenological methodology was chosen for this study because this approach studies the first-person point of view. In this study, the first-person point of view makes apparent the mother's reality, beliefs, knowledge, and questions pertaining to the experience of APBR. Mothers may still have unanswered questions regarding the meaning of their APBR experience. Heidegger's Interpretive Phenomenological approach provided the philosophical underpinnings and Van Manen's analytical steps explored the meaning of the mother's APBR experience from the perspective of the mother as she interprets the meaning of her experience. After obtaining IRB approval for this study, informed consent was given to the participants. A purposeful sampling of 15 mothers who had the experience of antepartum bed rest and have surpassed the six-week postpartum period was used in this study. Data consisted of one on one semi-structured interviews using open ended questions which were recorded and transcribed verbatim. The transcribed interviews were analyzed with Van Manen's Thematic Six Step and Three Method Approach. Implementation of Lincoln and Guba's framework with five criteria to evaluate rigor was used in the interpretation process.

Results: The results of this study, answered by the Van Manen Thematic approach, discovered Seven Themes, Two Subthemes, and an Overarching Theme. The Themes are Altered Relationships with Sub Themes of Altered Relationship Strengthening and Altered Relationships Weakening, Stigma, Guilt, with a subtheme of Imposed Guilt, Debilitating Core Strength, Bonding Detachment, Abandonment, and Disruptive Memories. The Overarching Theme Vulnerable Captivity evolved.

Implications: Findings from this study may contribute to closing the gap in knowledge and informs nursing practice that will allow continuation of care past the postpartum six-week period. This knowledge educates nurses and leads to improved practice by applying evidence-based information to update policies and advance nursing practice. Recommendation for further research is implementing qualitative research tools to measure the themes identified in this study. The study may also be duplicated using a variety in cultural and ethnic considerations.

WOMEN'S HEALTH

Intrapartum Nurse Staffing: The Case of Cesarean Births and Nursing Hours

*Barbara L. Wilson, PhD, RN
Interim Dean
College of Nursing
University of Utah
Salt Lake City, UT*

*Kristi Nelson, MBA, RN
Clinical Program Manager
Women and Newborn Clinical program
Intermountain Health Care
Salt Lake City, UT*

*Cempaka Martial, MStat
Senior Statistical Data Analyst
Women' and Newborn Clinical Program
Intermountain Health Care
Salt Lake City, UT*

*Richard J. Butler, PhD
Martha Jan Knowlton Care Professorship, Emeritus
Department of Economics
Brigham Young University
Provo, UT*

Purpose: We examined nurse staffing patterns on the likelihood of cesarean sections (C-sections) among low- risk, full gestation (37-42 weeks) births, and provided a testing framework to distinguish optimal levels of nurse staffing from ineffective levels of staffing.

Background: Studies involving nurse staffing have demonstrated that when the workload of nurses is high in acute-care medical / surgical units, the ability of the nurse to adequately monitor and assess his or her patients is impaired, leading to a greater likelihood of adverse patient outcomes. However, the ability to measure the influence of intrapartum nurse staffing on adverse birth outcomes, such as the mode of birth for low-risk women, has been missing until recent years.

Methods: This retrospective descriptive study used hours of productive nursing time per delivery as the treatment variable to determine direct nursing time per delivery and its impact on the likelihood of a C-section. We also assessed the likelihood of augmentations and of inductions, as well as the number of neonatal intensive care unit (NICU) hours per birth. Two complimentary models (the quadratic and piecewise regressions) distinguishing optimal staffing patterns from ineffective staffing patterns were developed. The study was implemented in eleven hospitals that are part of a large, integrated healthcare system in the Southwest.

Results: We found that the simplest model – linear regressions - of the likelihood of C-sections on nursing hours erroneously indicates that nursing hours have no effect on the likelihood of cesarean births. This conclusion was easily checked, and modified, with our optimal staffing models that; a) estimated a quadratic hours effect (added a squared-hours term to the specification) to indicate the optimal staffing hours for treatment, and b) utilized piecewise regression to double check on functional form around the optimal staffing. Per modeling prediction, the minimization of C-sections by employing optimal nursing care yielded a positive coefficient squared hours-term that was statistically significant. The piecewise regression confirmed that the response was symmetric around this optimum. Nursing hours did not affect the likelihood of inductions, augmentations, or NICU admissions in the present study.

Implications: As quantitative nursing models develop, it is important to avoid erroneous conclusions about best nursing practices because of incomplete specifications. This paper provides tools for distinguishing optimal staffing protocols from ineffective protocols for labor and delivery units; and demonstrates the effect that suboptimal staffing has on the likelihood of unanticipated cesarean births in low-risk term gestation women. It is clear that additional research is needed on the relationship between inadequate perinatal staffing and adverse outcomes for the childbearing family.

WOMEN'S HEALTH

Experience of Self-Care among Korean Women with Symptoms of Postpartum Depression

*Younglee Kim, PhD, RN, PHN
Assistant Professor, Nursing
California State University, San Bernardino
San Bernardo, CA*

*Vivien Dee, PhD, RN, NEA-BC, FAAN
Professor, Nursing
Azusa Pacific University
Azusa, CA*

*Cheryl Brandt, PhD, RN, ACNS-BC
Associate Professor, Nursing
California State University, San
Bernardino
San Bernardino, CA*

Purpose: To explore the personal experience of self-care activities among Korean women at risk for postpartum depression (PPD).

Background: The postpartum period is a transition period during which new mothers learn infant care and healthy self-care behaviors for physical and psychological health after birth. Women are asked to perform self-care for themselves and their babies at home. However postpartum depression is a common concern for the postpartum period. Maternal depression affects women's self-care abilities and overall health.

Methods: Our study was an interpretive description, qualitative study. Edinburgh Postnatal Depression Scale-Korean version was used to screen eligible participants. Twelve women at risk for PPD with an infant aged 12 months or younger participated in a personal interview about their experience during the postpartum period, including self-care and infant care. Interview data were analyzed using a line-by-line approach.

Results: All participants received Korean traditional postpartum care after hospital discharge in a Sanhujori facility where they rested and felt relaxed. Receiving care in Sanhujori facilities is a relatively new option for post-partum women. Upon their return home with their newborn, participants reported being worried about maternal and infant care and requested additional help. They wanted to receive ongoing social support during the postpartum period. Participants reported obtaining general information for self-care through Internet social networking services.

Conclusions: Healthcare professionals should conduct early detection of postpartum depression and provide systematic continuous educational interventions and/or programs for women to improve their self-care and infant care during the postpartum period. Sanhujori Facilities are included in this recommendation.

WOMEN'S HEALTH

Postpartum Depression Screening: A Cross-Sectional Analysis

Angie Docherty, NursD, MPH, RN
Associate Professor, School of Nursing
Oregon Health & Science University, Monmouth, OR

Rana Najjar, PhD, RN, CPNP
Assistant Professor, School of Nursing
Oregon Health & Science University

Sheryl Combs, MSN, PNP-BC, PMHMP-BC
Assistant Professor of Clinical Nursing
School of Nursing
Oregon Health & Science University

Rachel Woolley, MSN, FNP-BC
Clinical Instructor, School of Nursing
Oregon Health & Science University

Sydnee Stoyles, MBST, MAT
Senior Research Assistant, School of Nursing
Oregon Health & Science University

Aims: 1) To explore postpartum depression screening practices in the first postpartum year; 2) To determine barriers to meeting recommended screening guidelines in primary care.

Background: Postpartum depression (PPD), affects between 10 to 19% of women, and is the most underdiagnosed obstetric complication in the US. The condition is associated with elevated rates of co-morbidities and substance misuse, damage to personal relationships and suicide or suicide attempts. For impacted children, studies suggest negative outcomes such as poor attachment and cognitive and social dysfunction. With these sequelae, screening is imperative and should continue throughout the first postpartum year. However, there may be a lack of consistency in the application of screening in the primary care setting. In Oregon, with a self-reported PPD rate of 18.2%, we need to determine if PPD screening is reaching all women.

Method: A descriptive, cross-sectional design, using a 36-item survey, targeted Oregon primary care providers working with women and/or children in the first year following delivery. With over 1800 potential providers, determining an a-priori sample size was challenging as neither medical nor nursing board narrowed licensee information to the required category. Those with valid email addresses were targeted, seeking data on screening practice, timing, tools, referral processes, influence of payment source, practice size, location and percentage of patients from minority backgrounds or using Medicaid. Data were analyzed using R statistical computing and Pearson's chi square tests.

Results: Twenty-one physicians and 34 nurse practitioners responded. Almost half had received training on PPD during their provider education. About 67% had low rates of minority patients and 58% had low rates of privately insured patients. There was an almost even split between urban and rural/frontier practices. Around 29% followed the American Academy of Pediatrics recommendations and screened at well child visits; 64% followed the United States Preventative Services recommendations and screened at least once in the postpartum year; and 31% did not meet any screening guidelines (i.e. they only screened if clinically indicated or they did not screen at all using a standardized tool). The most common barrier to screening was limited knowledge and/or availability of referral services. The only area of significance was in professional designation: physicians were more likely to meet any recommended guidelines than nurse practitioners ($p = 0.023$).

Discussion: In this sample, almost one third reported they did not follow any screening guidelines. This may equate to a notable number of women not receiving PPD screening and the potential for diagnosis and treatment. The majority of those reporting they do not meet recommended guidelines were nurse practitioners (NPs). This is concerning given the focus of NP practice on disease prevention and health management.

Recommendations/Conclusions: Postpartum depression has significant consequences for the health of women and children. Primary care practitioners are on the front line of detection and further research is warranted to confirm a) if women are missing opportunities for early intervention and, b) if strategies can be established to standardize the approach in primary care.

WOMEN'S HEALTH

Finding Factors That Influence Pregnancy among Indigenous Girls in Paraguay

Sheri Palmer, RN, DNP
Teaching Professor, College of Nursing
Brigham Young University
Provo, UT

Sondra Heaston, MS, NP-C
Teaching Professor, College of Nursing
Brigham Young University
Provo, UT

Shelly Reed, PhD, DNP, APRN
Associate Teaching Professor
College of Nursing
Brigham Young University
Provo, UT

Rachel Trujillo, SN
College of Nursing
Brigham Young University
Provo, UT

Celsa Acosta, BS, SW
Cerrito Initiative Coordinator
Fundacion Paraguaya
Asuncion, PY, SA

Purpose: To identify main risk factors contributing to the high prevalence of teenage pregnancy among indigenous communities. With this knowledge, interventions can be planned.

Background: Adolescent pregnancy is a major issue throughout the world. Risk factors for adolescent pregnancy typically include low income, poor education, family members that experience adolescent pregnancy, first sexual contact at a young age, multiple sex partners, parental absence, and lack of reproduction and contraceptive education. Little evidence is available identifying specific contributors to adolescent pregnancy in Paraguay, a primarily rural country in South America. In addition, lack of information regarding the actual incidence of adolescent pregnancy and women's health resources available to young people prevents the development of effective interventions and aid.

Method: An IRB approved, qualitative descriptive study was employed to identify risk factors contributing to adolescent pregnancy. We worked with a country-led non-government-organization, Fundacion Paraguaya, who also have the same goals of working with teenage pregnancy. A convenience sample of 39 community leaders/educators who work with youth were interviewed using a semi-structured interview guide. The community leaders/educators were located in remote locations throughout the Chaco (rural area) of Paraguay. Interviews were recorded and transcribed. Members of the research team separately analyzed data to identify preliminary themes. General themes were finalized as a group.

Results: The community leaders and educators were very eager to participate in the study. They see the challenge of teenage pregnancy up close in their clinics and classrooms. Most of the time this leads to the girl exiting the school system permanently. Among the general themes, most commonly community leaders/educators feel adolescent pregnancy results from a lack of structured activities for youth, parental desertion in the household, inadequate sex education, and shame of buying contraceptives. In addition, there is a lack of long-term goals outside of parenthood for indigenous girls. This includes a cultural acceptance of pregnancy as an adolescent norm, with an **example that 50-70% of indigenous girls get pregnant before the age of 16.**

Conclusions: The results of this study identified many risk factors leading to teenage pregnancy in indigenous, rural communities in Paraguay. Knowing these results will guide to possible interventions intended to reduce adolescent pregnancy. Delaying pregnancy among youth will benefit their lives physically, financially, emotionally, and socially. The next phase of this research, in 2019, will include literature searches of current research and recommendations from the leaders/educators in Paraguay to identify positive solutions. An inter-professional collaboration of doctors, nurses, educators, and social workers will work with the Fundacion Paraguaya for coordinating the interventions. In addition, education about sex and maturation will be essential within groups of girls and their families in these identified communities.

Funding: In part by an Experiential Learning grant, Brigham Young University.

WOMEN'S HEALTH

CVD Risk in Menopause: An Investigation of Actual and Perceived Risk Factors

Kathy Prue-Owens, PhD, CCRN, RN

Assistant Professor

Helen and Arthur E. Johnson Beth-El College of Nursing and Health Sciences

University of Colorado, Colorado Springs (UCCS)

Colorado Springs, CO

Leilani Feliciano, PhD

Director of Clinical Training

Lab Associate Professor

Department of Psychology

UCCS, CO

Michele Okun, PhD

Srrsasc-Biobehavioral

SciBiofrontiers

UCCS, CO

Kathrine Johanson, MA

Graduate Student, UCCS, CO

Lauren Schneider, MA

Graduate Student, UCCS, CO

Background: Cardiovascular Disease (CVD) causes more deaths in women than any other major chronic condition including cancer and accidents. Despite medical and treatment advances, the mortality rate for women with CVD has climbed dramatically. The incidence of CVD is ubiquitous including all women especially those of lower socioeconomic and educational background, including female veterans. Menopausal women may confer different risk factors than men, including higher risks for insomnia, sleep disordered breathing, diabetes, stress, and depression.

Purpose: Pilot study to examine the impact of insomnia (INS) on cardiovascular risk factors among a group of menopausal women with and without Type 2 Diabetes (T2DM); utilizing a Biopsychosocial approach.

Methods: The current pilot study aims to screen menopausal (self-reported) women, ages 50-64, half with T2DM and half without T2DM for a final sample of 50 (25 with T2DM and 25 without T2DM). The use of anthropometric data and surveys included information on nutrition, physical activity, sleep, perceived risk (Cardiovascular Risk Perception Survey) and objective (AHA risk calculator) CVD risk, mood, current medications and biomarker data.

Results: Bivariate correlations and chi-square tests tested for differences. Menopausal women ($n = 28$; $\text{Mage} = 58.4$, $\text{SD} = 3.3$ years; $\text{MBMI} = 25.9 \pm 5.7$) with and without prediabetes mellitus (PDM) or Type 2 diabetes mellitus (T2DM) participated. Results indicated INS was associated with depression and anxiety ($r = .463$, $p = .020$; $r = .523$, $p = .007$), exercise frequency ($r = -.566$, $p = .003$), sleep quality ($r = -.583$, $p = .002$), and perceived risk for CVD ($r = .46$, $p = .031$). Risk for SDB was associated with depression ($r = .466$, $p = .016$), perceived CVD risk ($r = .551$, $p = .005$), but not objective AHA risk ($r = -.367$, $p = .178$). Depression was also associated with higher glucose levels ($r = .794$, $p = .004$) and greater perceived CVD risk ($r = .430$, $p = 0.32$). Anxiety was further associated with high triglycerides ($r = .609$, $p = .012$) and poor sleep quality ($r = -.382$, $p = .045$). Interestingly, stress did not correlate with any of the CVD risk measures. Of our available biomarkers, only total cholesterol was associated with perceived CVD risk ($r = .568$, $p = .034$). However, BMI ($r = .536$, $p = .008$), exercise ($r = -.721$, $p < .001$), and diet ($r = -.521$, $p = .008$) were significantly associated with perceived CVD risk. None of our other examined variables were associated with objective AHA risk. There were no significant differences between participants with and without diabetes with regard to any of the variables assessed.

Nursing Relevance: Traditional risk factors, such as BMI and blood pressure, appear to be less important in identifying risk for CVD than more novel, less explored health related behaviors. This small pilot study suggests that menopausal women who engage in positive health behaviors have fewer psychological symptoms and lower perceived CVD risk. This provides the opportunity for nurses to assist women across the spectrum of care to engage in healthy behaviors.

WOMEN'S HEALTH

Breast & Cervical Cancer Screening in Asians, Native Hawaiians, and Pacific Islanders

Susan Driscoll, PhD, MPH, APRN
Assistant Professor, Department of Nursing
University of Hawaii at Manoa
Honolulu, HI

Cheryl Albright, PhD, MPH
Professor
Department of Nursing
University of Hawaii at Manoa
Honolulu, HI

Eunjung Lim, PhD, MS
Assistant Professor and Biostatistician
Department of Complementary and
Integrative Medicine
John A. Burns School of Medicine
Honolulu, HI

Background: There are significant variations in breast and cervical cancer screening (BCCS) behaviors within and between Asian, Native Hawaiian, and other Pacific Islander (ANHOPI) subgroups. However, most ANHOPI BCCS research and national survey data are collected and reported in the aggregate, not taking their cultural and ethnic diversity into account. The 2012 Behavioral Risk Factor Surveillance System (BRFSS) data showed that among all reported race categorizations, the lowest cervical cancer screening rates were seen in ANHOPI women, with only 40.8% of Native Hawaiians and Pacific Islanders without a regular healthcare provider being screened in the previous five years. California Health Interview Survey data showed that among Asian women, cervical cancer mortality was highest in Vietnamese and screening was highest in Filipinos compared to women from other Asian subgroups. For breast cancer, Filipino women had the highest mortality rates, while Korean women had the lowest screening rates among Asian subgroups. In 2009, the Hawaii BRFSS survey started collecting disaggregated racial categorizations, separating Asians into Chinese, Filipino, Japanese, Korean, Vietnamese, Malaysian, Laotian, Cambodian, Asian Indian, and “other” and Pacific Islanders into Samoan, Guamanian/Chamorro, Tongan, Fijian, Micronesian, Native Hawaiian, and “other”. The Hawaii BRFSS also collected several relevant BCCS predictor variables, including income, healthcare access, health insurance coverage, and select breast and cervical cancer risk factors. These data provide a unique opportunity to characterize and compare factors inhibiting or facilitating BCCS behaviors within and between ANHOPI subgroups living in Hawaii.

Aim: To examine differences in and predictors of BCCS among disaggregated ANHOPI subgroup data from the Hawaii BRFSS.

Methods: Hawaii BRFSS data from 2009-2016 will be used to describe BCCS behaviors among women in ANHOPI subgroups. Bivariate associations between women in ANHOPI subgroups and other predictor variables will be calculated. Multivariable logistic regression models will be created, including predictors with significant ($p < 0.05$) associations to BCCS behaviors, to compare BCCS behaviors and to analyze the effect of predictors between ANHOPI women living in Hawaii.

Results: Results will summarize BCCS behaviors within and compare BCCS behaviors between ANHOPI subgroups among approximately 25,000 women participating in the Hawaii BRFSS from 2009-2016. Based on 2017 Hawaii census data, approximately 37.8% ($n=9450$) of participants will be Asian and 10% ($n=2,500$) will be Pacific Islanders. Demographic data and other predictor variables, like healthcare access/coverage/cost, perceived health, education, income, exercise, BMI, smoking, and alcohol use, will be summarized and their effect on BCCS behaviors among ANHOPI subgroups will be determined.

Implications: Study results will provide specific information on BCCS behaviors and factors that affect these behaviors among the culturally diverse ANHOPI subgroups living in Hawaii. This information will aid in the development of tailored, culturally appropriate healthcare service and promotion strategies aimed at increasing knowledge of, participation in, and expansion of BCCS for those ANHOPI subgroups most in need. This is important, as the biggest reductions in breast and cervical cancer morbidity and mortality can be attained by increasing participation in BCCS.

Funding: Supported in part by School of Nursing and Dental Hygiene, University of Hawaii at Manoa and two infrastructure grants (U54MD007584, U54MD007601) from the National Institutes of Health.

WOMEN'S HEALTH

A Portable Mindfulness Intervention to Decrease Insomnia in Homeless Women

*Mary Barger, PhD, CNM, FACNM
Associate Professor*

*Hahn School of Nursing and Health Science, Beyster Institute for Nursing Research
University of San Diego
San Diego, CA*

*Jill Bormann, PhD, RN, FAAN
Clinical Professor*

*Hahn School of Nursing and Health Science, Beyster Institute for Nursing Research
University of San Diego
San Diego, CA*

Purpose/Aims: To test whether a meditation-based mindfulness intervention, the Mantram Repetition Program (MRP), can improve insomnia in women experiencing some type of homelessness.

Research Hypotheses: MRP will be more effective than an attention control condition to:

Aim 1: Reduce insomnia and sleep-related daytime impairment.

Aim 2: Reduce physiological and psychological stress symptoms.

Background: The fastest-growing segment of the homeless population are women and families headed by women; currently estimated at 39.5% of the total homeless population (Henry, Watt, Rosenthal, A., & Abt Associates, 2016). San Diego has the fourth largest population of homeless in the country (Henry, et al., 2016). Our feasibility study was the first to document the incidence of moderate to severe insomnia (67%) among women living in their cars or transitional housing (Barger, Weinrich, Bormann, Bouvier, & Hardin, 2015). The MRP teaches a) the frequent, silent, intermittent repetition of a self-selected (sacred) word, b) intentional slowing down of thoughts and behaviors, and c) practice of one-pointed attention. MRP has significantly decreased insomnia, depression, anxiety, and posttraumatic stress disorder (PTSD) symptoms in randomized clinical trials among Veterans and other populations (Bormann et al., 2014). Other studies using hair cortisol for assessing levels of stress have detected significant changes in as little as 4 weeks (Wosu, Valdimarsdottir, Shields, Williams, & Williams, 2013).

Methods: A pilot randomized cluster trial will compare MRP to a control condition, Women's Health Education (WHE). Women in transitional housing for homeless women or those using a safe car park program are eligible for the study. Women are randomly assigned to one of the two study conditions in groups of 6-10. Graduate nursing students deliver the study interventions in weekly 1-hour sessions over 6 consecutive weeks. Study data is collected at baseline, 3 and 6 weeks. Outcome variables include insomnia (Insomnia Severity Index – Cronbach's 0.90 (Morin, Belleville, Belanger, & Ivers, 2011)) and sleep-related daytime impairment (PROMIS sleep impairment). Physiologic stress is measured using hair cortisol collected at baseline and 6 weeks. Psychological stress is measured with PROMIS short forms for anxiety and depression.

Statistical analyses will calculate descriptive statistics between the two groups. Significant differences between groups will be accounted for using multivariate regression models to test the difference in the linear change trajectories between the MRP and WHE groups on each of the study outcomes.

Findings: Study will be completed by November 2018 with an anticipated sample size 45.

Implications: Results of this pilot research will be used to calculate effects sizes. The portability of MRP allows women to use the intervention anywhere and anytime. Improving insomnia and physiological and psychological stress symptoms could improve overall health, and improve problem-solving essential to women to changing their current situation. The ease of teaching the intervention allows for its incorporation into existing homeless programs nationally.

WOMEN'S HEALTH

Evaluation of an Educational Program for Promotoras on Urinary Incontinence Self-Care

Lori S. Saiki, PhD, CCCN, RN
Assistant Professor
New Mexico State University
Las Cruces, NM

Martha L. Morales, PhD, LCCE,
FACCE, RN, Assistant Professor
New Mexico State University
Las Cruces, NM

Purpose: The purpose of this community-based research is to evaluate the content of an educational program developed by nurses to meet previously identified needs of community health workers, or *promotoras*, in supporting rural Hispanic adults in self-care management of urinary incontinence.

Rationale: For rural Hispanic adults with urinary incontinence, access to urinary health promotion education and support for self-care incontinence symptom management is limited. Of particular concern for rural adults who are already vulnerable to the effects of isolation, chronic urinary incontinence has been demonstrated to negatively affect quality of life and is associated with withdrawal from social activities. Persily and Hildebrandt's Theory of Community Empowerment was chosen to guide this ongoing community-based research program with the overall goal of improving symptom management and quality of life for rural Hispanic adults with urinary incontinence. Because of their role as a trusted and knowledgeable community member, *promotoras* are in a unique position to offer support to rural adults who are trying to manage urinary incontinence symptoms in their everyday life. Responses from *promotoras* participating in the initial needs assessment demonstrated a lack of knowledge regarding evidence-based behavioral interventions that could resolve or lessen incontinence symptoms. With the exception of "Kegels," the participants did not know what self-care interventions are available to manage incontinence symptoms, how the interventions work, and how to perform the interventions, including how to perform pelvic floor muscle exercises. Although the *promotoras* expressed a lack of confidence in the effectiveness of behavioral interventions to manage urinary incontinence, they requested educational programming on incontinence self-care management strategies so that they may support members of their community. An educational program was developed to address these knowledge deficits. Because rural adults are reluctant to seek medical care for incontinence and health care services are difficult to access in rural settings, the *promotoras* were eager to be trained to provide that outreach themselves rather than rely on outsider services, such as monthly nurse-led community seminars.

Methods: A descriptive, qualitative study design was chosen to evaluate a pilot educational module presented to *promotoras* during monthly meetings at community resource centers on the topic of evidence-based incontinence self-care strategies. Following informed consent, verbal feedback and anonymous written evaluations of *promotoras'* responses to open-ended questions about the quality, clarity, and usefulness of the content in the educational modules will be collected and analyzed by methods of content analysis.

Results: An analysis of *promotoras'* perspectives on content clarity, quality, and *promotoras'* confidence in the usefulness of the educational module to meeting the needs of community members will be presented.

Implications: Providing nurse-led educational programming for community health workers is an essential step in developing a nurse-*promotora* partnership that may meet community needs for support in urinary incontinence self-care. *Promotora's* verbal and written qualitative feedback of this educational module will be used to guide future research and development of a sustainable community outreach program developed to provide rural residents with support from *promotoras* trained in self-care strategies to manage urinary incontinence.

WOMEN'S HEALTH

Effect of Integrative Healing Therapies on Maternal Pain, Anxiety and Breastfeeding

*Jennifer Turney, MSN, RN, CNS, CPN
Clinical Nurse Specialist
In-Service Education
Sharp Grossmont Hospital
La Mesa, CA
jenntny@yahoo.com*

*Sheila Sweeney, BSN, RN
Clinical Nurse Specialist Student
Point Loma Nazarene University
Point Loma, CA*

Purpose/Aims: The purpose of this project is to evaluate the benefit of integrative healing therapies on pain, anxiety, and exclusive breastfeeding rates in postpartum mothers.

Rationale/Background: Pregnancy and childbirth are life-changing events that can lead to high levels of stress and worry in the new mother. Even at a subclinical level, maternal anxiety has a negative impact on breastfeeding outcomes, maternal bonding, and maternal coping abilities. Stress negatively impacts the letdown response that occurs during a feeding, decreasing the flow and volume of breast milk delivered to the infant. Many hospitals have introduced integrative medicine treatments for patients experiencing pain and stress. While most hospitals focus these services in palliative care patient areas, recent evidence has shown integrative healing therapies have a positive effect on breastfeeding in postpartum women.

Methods: An evidence-based pre-post evaluation will be conducted on postpartum mothers admitted to the postpartum unit who receive integrative healing therapies. All mothers will be offered the opportunity to participate in integrative healing services. Therapies the patient can choose from include healing touch, Reiki, hand massage, guided imagery and aromatherapy. All therapies except aromatherapy will be administered by the hospital Integrative Care Practitioner. The nursing staff will administer aromatherapy. A survey evaluating pain and anxiety will be given prior to the integrative healing therapy and then post. Pain will be evaluated through a self-reported pain score on a numeric scale of 0-10. Anxiety will be evaluated using the modified State-Trait Anxiety Inventory (STAI: Y-6 item) survey. Breastfeeding rates at discharge will be evaluated through patient chart review.

Outcomes: Outcomes are pending at this time and are expected to be completed in December 2018. Pre and post pain scores and State-Trait Anxiety Inventory (STAI: Y-6 item) scores will be compared to see if treatments show a positive outcome. Exclusive breastfeeding rates and pain medication usage of the participants will be evaluated to see if there is an effect of the integrative healing therapies.

Conclusion: Providing integrative healing therapies to postpartum mothers promotes an overall therapeutic and relaxing environment to establish breastfeeding and cope with pain and stress after childbirth.

RESEARCH & INFORMATION EXCHANGE

The Research & Information Exchange (R&IE) includes posters of research conducted by faculty, students, and nurses in clinical practice. These posters have been selected by and submitted from WIN member agencies.

ARIZONA STATE UNIVERSITY COLLEGE OF NURSING & HEALTH INNOVATION

Phoenix, AZ

A PSYCHO-BEHAVIORAL MODEL OF IMPROVED BODY COMPOSITION IN MIDLIFE WOMEN WITH A GENTLE MOVEMENT INTERVENTION

Dara James

ETHNIC DIFFERENCES IN HEALTH AND CARDIOVASCULAR RISK FACTORS AMONG ASIAN AMERICANS RESIDING IN ARIZONA

Erlinda Singarajah

LINKING ACTIVE TRANSPORTATION AND CARDIOMETABOLIC RISK FACTORS AMONG HISPANIC MOTHERS

Elizabeth Lorenzo

AZUSA PACIFIC UNIVERSITY SCHOOL OF NURSING

Azusa, CA

HEALTH PERCEPTIONS ABOUT HEPATITIS B VIRUS INFECTIONS AMONG YOUNG CAMBODIAN AMERICAN WOMEN

Jessica Weidner, Marie Fongwa, Vivien Dee, John Doyle

VASCULAR ACCESS: ADAPTING EVIDENCE-BASED GUIDELINES IN A PEDIATRIC SETTING

Dayna Holt, Teresa Dodd-Butera, Elizabeth Sharpe, Kathleen Sweeney

APPLYING ROY ADAPTATION MODEL TO A STUDY ON SEXUAL DYSFUNCTION AMONG MALES

Sagie Deguzman

SOCIAL DETERMINANTS OF HEALTH AMONG ARAB AMERICANS AT RISK FOR DIABETES TYPE 2

Saleh Alshargi, Vivien Dee, Lina Badr, Marie Fongwa

ACCULTURATION, LIFE-STYLE BEHAVIORS AND CVD RISK
FACTORS AMONG ARAB AMERICANS IN THE US
Mohammad Tarkham, Vivien Dee, Lina Badr, Aurelia Macabasco-O'Connell

HEALTH POLICY AND EQUITY IN FETAL ALCOHOL
SPECTRUM DISORDERS
Gabrielle C. Johnson, Teresa Dodd-Butera

PERCEPTIONS OF PALLIATIVE CARE BY ADULTS WITH NEW
ONSET HEART FAILURE
Valerie Joy Smith, Cheryl Westlake

SELF-CARE MANAGEMENT IN HOMELESS ADULTS
WITH HYPERTENSION
Laurie Lang, Cheryl Westlake

READINESS TO PRACTICE: A CONCEPT ANALYSIS
Evangeline Fangonil-Gagalang

PARENTAL NEEDS DURING THEIR NON-VERBAL CHILD'S
TRANSITION TO ADULTHOOD
Adrienne Floriano, Pam Cone

**BETTY IRENE MOORE SCHOOL OF NURSING
AT UC DAVIS**
Sacramento, CA

AEROBIC VS. RESISTANCE: THE RIGHT WORKOUT TO
LOWER YOUR BLOOD PRESSURE
*Marie Marchetti, Samantha Jacinto, Arzo Nizam, Ashley Hurst, Adrianna Marcus,
Angie Ling, Hanna Masseur*

MORAL DISTRESS IN NEONATAL INTENSIVE CARE UNIT
(NICU) NURSES
Maribel Vera, Susan L. Adams

BUPRENORPHINE VS. METHADONE EFFECTS ON NEONATAL
ABSTINENCE SYNDROME
*Kiana Hood, Andy Thompson, Devon Gersh, Isabelle Huynh, Jessica De La Pena,
Mariam Nik, Obia Njoku*

**EMERGENCY DEPARTMENT NURSES' PERCEIVED
COMPETENCE IN DISASTER PREPAREDNESS**

Christie Meredith, Jessica Draughon Moret

**POSTPARTUM DEPRESSION SCREENING:
EDUCATING THE BEDSIDE NURSE**

Nadia M. Carrasco, Susan L. Adams

**BEST PRACTICES FOR WORKING WITH DEAF AND HARD
OF HEARING PATIENTS**

Stacy McCarthy

BOISE STATE UNIVERSITY SCHOOL OF NURSING

Boise, ID

THE IMPACT OF SOCIAL MEDIA ON MENTAL HEALTH

Lacy Archer, Greta Hedrick, April Makujina, Mari Medellin, Debbie Thompson

SCHOOL AND WORK STRESS: FINDING THE BALANCE

Taylor Swetavage

USE OF THE IDAHO POST: IS THERE CONFUSION?

Jennifer Stibrany

**BARRIERS TO ACCURATE REPORTING OF WORKPLACE
VIOLENCE**

Jill Henggeler, Nate Stranger

**ASSESSMENT OF SUICIDE SCREENING TOOLS FOR
ADOLESCENTS**

Brynn Peters, Jordan Purvis, Kelsey Morey

BRIGHAM YOUNG UNIVERSITY COLLEGE OF NURSING

Provo, UT

**DEVELOPING A POST-FALL ASSESSMENT PROTOCOL TO
REDUCE MISSED INJURIES**

Jeana Escobar, Tracy Dustin, Blaine Winters, Megan Penni

COMMUNICATION THEORIES IN HEALTHCARE

Christin Hickman

ELEMENTS OF QUALITATIVE ANALYSIS

Keeley Austin

ASSESSING RISK FOR INHERITED BREAST CANCER:
BEST PRACTICE

Christine Guymon

WHO'S DRESSING? NURSES, MEDICAL STUDENT DRESSERS,
AND THE NATURE OF NURSING WORK IN NINETEENTH-
CENTURY PHILADELPHIA AND LONDON

Sheri Tesseyman, Christine Hallett, Jane Brooks

IMPROVING UNDERGRADUATE NURSING STUDENT
UNDERSTANDING OF INTIMATE PARTNER VIOLENCE

Peggy H. Anderson, Gaye Ray

CHARLES R. DREW UNIVERSITY
MERVYN M. DYMALLY SCHOOL OF NURSING

Los Angeles, CA

TREATMENT OF PREGNANT WOMEN WITH SEXUALLY
TRANSMITTED DISEASE: A SUMMIT FOR EDUCATION

*Ana Cortez, Magda Shaheen, Martasha Asher, Jacqueline Brown, Chinenye Okoye,
Jazmyn Childress, Chika Onyebalu, Brittany Garnet, Uchenna Ekeanyanwu,
Smart Nwokocheboka, Ismael Colmenares, Earl James Erez, Sharon Sylvers,
Lizette Jauregui*

TREATMENT BARRIERS AMONG MINORITY CHILDREN WITH
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*Shelbea Roberson, Bantale Ayisire, Victor Chukwu, NnennaEkejiuba,
ObinnaMetu, Lydia Vargas, Kristine Okoye, Chioma Ahaiwe, Juana Ferreros*

CHILDREN'S HOSPITAL COLORADO

Aurora, CO

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HOAG MEMORIAL HOSPITAL PRESBYTERIAN

Newport Beach, CA

NV-HAP! NOT ON MY MAP

Chet McCauley, Ahlam Jadalla

LINFIELD-GOOD SAMARITAN SCHOOL OF NURSING

Portland, OR

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LOMA LINDA UNIVERSITY SCHOOL OF NURSING

Loma Linda, CA

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LUCILE PACKARD CHILDREN'S HOSPITAL

Palo Alto, CA

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MAYO CLINIC ARIZONA

Phoenix, AZ

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Cheyenna Kopacz

MONTANA STATE UNIVERSITY COLLEGE OF NURSING

Bozeman, MT

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Katie Landis

NEW MEXICO STATE UNIVERSITY

Las Cruces, NM

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SCHOOL OF NURSING**

Portland, OR

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PACIFIC LUTHERAN UNIVERSITY SCHOOL OF NURSING

Tacoma, WA

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PROVIDENCE ST. JOSEPH HEALTH

Missoula, MT

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SAMUEL MERRITT UNIVERSITY SCHOOL OF NURSING

Oakland, CA

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Seattle, WA

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UNIVERSITY OF ARIZONA COLLEGE OF NURSING

Tucson, AZ

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**UNIVERSITY OF CALIFORNIA, IRVINE
SUE & BILL GROSS SCHOOL OF NURSING**

Irvine, CA

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*Benissa E. Salem, Katherine McClendon, Jordan Kwon, Jaemilyn Lucas,
Benjamin W. Rogers, Catherine Sarkisian, Stephanie S. Covington, Jennifer Anderson*

**UNIVERSITY OF CALIFORNIA, LOS ANGELES
SCHOOL OF NURSING**

Los Angeles, CA

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*Kristin R. Choi, A Saadi, S Takada, MC Easterlin, LS Buchbinder, DC Johnson,
FJ Zimmerman*

UCSF MEDICAL CENTER

San Francisco, CA

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UCSF SCHOOL OF NURSING

San Francisco, CA

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UNIVERSITY OF COLORADO COLLEGE OF NURSING

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**UNIVERSITY OF NEVADA, LAS VEGAS SCHOOL
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Las Vegas, NV

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**UNIVERSITY OF NEW MEXICO COLLEGE
OF NURSING**

Albuquerque, NM

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UNIVERSITY OF NEW MEXICO HOSPITALS

Albuquerque, NM

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Marie Sedillo

UNIVERSITY OF PORTLAND SCHOOL OF NURSING

Portland, OR

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UNIVERSITY OF SAN DIEGO
HAHN SCHOOL OF NURSING & HEALTH SCIENCE

San Diego, CA

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Arthur Roehr

UNIVERSITY OF UTAH COLLEGE OF NURSING

Salt Lake City, UT

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UNIVERSITY OF WASHINGTON SCHOOL OF NURSING

Seattle, WA

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SCHOOL OF NURSING**

Laramie, WY

**IMPROVING FOLLOW-UP FOR DIABETES AND
HYPERTENSION**

Meghan Pankey, Kellie Creaser

**RESTRUCTURING USE OF URGENT CARE TO
ENROLLMENT IN PRIMARY CARE RESTRUCTURING**

Sara Parsons, Jennifer Wagy

**EDUCATIONAL INNOVATION: CLINICAL PRACTICUM TRAIN-
ING IN SUBSTANCE USE DISORDERS
FOR ACCELERATED BSN STUDENTS**

Sarah Kooienga, Rachel Thomas

**VETERAN AFFAIRS HEALTHCARE SYSTEM
SAN DIEGO**

San Diego, CA

**POSTOPERATIVE URINARY RETENTION:
FLOW IS IM-POUR-TANT!**

Mary Ellen Dellefield, Rebecca Long, Agnes Guanzon

WIN HONORS

The Western Institute of Nursing proudly recognized outstanding Western members and friends with the following awards and honors in 2019.

DISTINGUISHED RESEARCH LECTURESHIP AWARD

The Distinguished Research Lectureship recognizes a senior researcher whose research efforts have made significant and sustained contributions to nursing. The 2019 award recipient was:

Paula Meek, PhD, RN, FAAN, Professor and Senior Faculty Scholar, College of Nursing, University of Colorado Anschutz Medical Campus, Aurora, CO

CAROL A. LINDEMAN AWARD FOR A NEW RESEARCHER

The New Researcher Award was established in 1976 by Carol A. Lindeman to support nursing researchers early in their careers. In 1987, the award was renamed to recognize Dr. Lindeman for her contributions and support of colleagues. The 2019 award recipient was:

Krista L. Scorson, MS, RN, PMHNP-BC, PhD Candidate, College of Nursing, University of New Mexico, Albuquerque, NM

REGIONAL GERIATRIC NURSING RESEARCH AWARD

The Western Institute of Nursing makes annual awards to a senior nurse researcher and a new nurse researcher to recognize outstanding nurse researchers and to foster and showcase geriatric nursing research. Recipient of the Senior Researcher award in 2019 was:

Kathleen Insel, PhD, RN, Professor and Interim Biobehavioral Health Science Division Director, College of Nursing, University of Arizona, Tucson, AZ

REGIONAL GERIATRIC NURSING EDUCATION AWARD

The Western Institute of Nursing makes an annual Regional Geriatric Nursing Education Award to recognize evidence of excellence and/or innovation in gerontological nursing education. The 2019 award recipient was:

Hilaire Thompson, PhD, RN, ARNP, CNRN, AGACNP-BC, FAAN, Professor and Graduate Program Director, School of Nursing, University of Washington, Seattle, WA

ANNA M. SHANNON MENTORSHIP AWARD

The Anna M. Shannon Mentorship Award was established in the name of the former Dean and Professor of the College of Nursing, Montana State University – Bozeman who unselfishly supported and promoted the professional growth of other nurses in the West. The 2019 award recipient was:

Jane Grassley, PhD, RN, IBCLC, Professor and Jody DeMeyer Endowed Chair for Nursing, Boise State University, Boise, ID

JO ELEANOR ELLIOTT LEADERSHIP AWARD

In 1988, Jeanne Kearns, formerly Executive Director of WIN, established the Jo Eleanor Elliott Leadership Award. This award honors Jo Eleanor Elliott for outstanding leadership while serving as the Director of Nursing Programs at WICHE and the Executive Secretary of WCHEN from 1957-1980. The 2019 Award recipient was:

Lauren Clark, RN, PhD, FAAN, Professor, College of Nursing, University of Utah, Salt Lake City, UT

ANN M. VODA AMERICAN INDIAN/ALASKA NATIVE/FIRST NATION CONFERENCE AWARD

The Ann M. Voda American Indian/Alaska Native/First Nation Conference Award was established in 2008 by Ann Voda to encourage American Indian/Alaskan Native/First Nation nursing students or nurse clinicians to participate with the WIN community of scholars. The 2019 award recipient was:

Rhea N. DeCoteau, MSN, RN, CDE, PhD Student, College of Nursing, University of Arizona, Tucson, AZ

WIN EMERITI

The honorary designation of WIN Emeriti was established in 1984 by the Western Council on Higher Education for Nursing (WCHEN). The Western Institute of Nursing (WIN) has continued this honorary designation to recognize retired nurses or other individuals who have demonstrated distinguished service to WIN or its predecessor, WCHEN. The individuals on whom the honorary designation was bestowed in 2019 were:

Elaine Marshall, PhD, RN, FAAN, Dean and Emerita Professor of Nursing, College of Nursing, Brigham Young University, Provo, UT

Joyce Verran, PhD, RN, FAAN, WAN, Professor, College of Nursing, University of Colorado, Aurora, CO

WESTERN ACADEMY OF NURSES

The Western Academy of Nurses recognizes and honors nurses who have demonstrated excellence in nursing practice and who have advanced nursing in direct care, education, or research. Inducted into the Academy in 2019 were:

Susan Bakewell-Sachs, PhD, RN, FAAN, Vice President for Nursing Affairs & Dean, School of Nursing, Oregon Health & Science University, Portland, OR

Elizabeth Bridges, PhD, RN, CCNS, FCCM, FAAN, Professor, School of Nursing, University of Washington, Seattle, WA

Lorraine S. Evangelista, PhD, RN, CNS, FAHA, FAAN, Professor, Sue and Bill Gross School of Nursing, University of California, Irvine, CA

Sheila Gephart, PhD, RN, Associate Professor, College of Nursing, University of Arizona, Tucson, AZ

Ahlam Jadalla, PhD, RN, Associate Professor, School of Nursing, California State University, Long Beach and Nurse Scientist, Hoag Memorial Hospital Presbyterian, Newport Beach, CA

Anthony McGuire, PhD, ACNPC, ACNP-BC, FAHA, Professor, Chair, and Director, Department of Nursing, St. Joseph's College, Standish, ME

Michael Rice, PhD, APN, RN, FAAN, Endowed Chair and Professor of Psychiatric Nursing, College of Nursing, University of Colorado Anschutz Medical Center, Aurora, CO

Dana N. Rutledge, PhD, RN, Professor, School of Nursing, California State University, Fullerton, CA

Kimberly Shea, PhD, RN, CHPN, Clinical Associate Professor, College of Nursing, University of Arizona, Tucson, AZ

Hilaire Thompson, PhD, RN, ARNP, CNRN, AGACNP-BC, ACNPC-AG, FAAN, Professor and Graduate Program Director, School of Nursing, University of Washington, Seattle, WA

Alice Tse, PhD, RN, APRN, FAAN, Professor and Chair, Department of Nursing, University of Hawai'i at Manoa, Honolulu, HI

FRIENDS OF WIN AWARD

In 2010, the Western Institute of Nursing Board of Governors established the Friends of WIN Award. The award is given for stellar individuals or organizations that have made outstanding contributions to the Western Institute of Nursing (WIN). The intent of this award is to recognize these individuals or organizations and to thank them for their contributions. The 2019 award recipient was:

Susan Bakewell-Sachs, PhD, RN, FAAN, Vice President for Nursing Affairs & Dean, School of Nursing, Oregon Health & Science University, Portland, OR

**AMERICAN NURSES FOUNDATION/WESTERN INSTITUTE OF NURSING
SCHOLAR AWARD**

The American Nurses Foundation (ANF) and the Western Institute of Nursing (WIN) jointly sponsor a research grant to a WIN member selected through the ANF selection process. The 2018 award recipient was:

Cha-Nam Shin, PhD, Assistant Professor, College of Nursing and Health Innovation, Arizona State University, Tempe, AZ

**SIGMA THETA TAU INTERNATIONAL/WESTERN INSTITUTE OF
NURSING RESEARCH GRANT**

Sigma Theta Tau International (STTI) and the Western Institute of Nursing (WIN) jointly sponsor a research grant to encourage qualified nurses to contribute to the advancement of nursing through research. The 2019 grant recipient was:

Rose Mary Xavier, PhD, Perelman School of Medicine, Psychiatry, University of Pennsylvania, Philadelphia, PA

WIN ELECTED AND APPOINTED OFFICIALS

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