Preoperative Distress and Postoperative Pain Outcomes After Ambulatory Mastectomy with Immediate Implant Reconstruction

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Preoperative psychological distress associated with worse postoperative pain, recovery, patient-reported outcomes and increased post-discharge healthcare utilization, though it overlaps with other psychological factors like anxiety

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Introduction

- Preoperative psychological distress is associated with worse postoperative pain.[1]
- The impact of distress on post-discharge recovery and healthcare utilization remains unclear.
- Ambulatory mastectomy patients are at high risk for pain and psychosocial burden.
- **Objective:** Evaluate the association between clinically significant preoperative psychological distress[2] and post-discharge pain outcomes, recovery, and healthcare utilization following ambulatory mastectomy with reconstruction.

Methods

- **Design**: Retrospective cohort study (IRB-approved), N = 1,281
- **Population**: Ambulatory mastectomy with immediate reconstruction (08/2022 - 06/2024)
- **Exposure**: Distress Thermometer ≥ 4 within 6 months preoperatively
- **Primary Outcome**: Pain clinic referral within 6 months
- **Secondary Outcomes**: PACU MME, urgent care visits, pain severity red alerts, quality of recovery
- **Analysis**: Chi-square, Wilcoxon tests; multivariable logistic regression

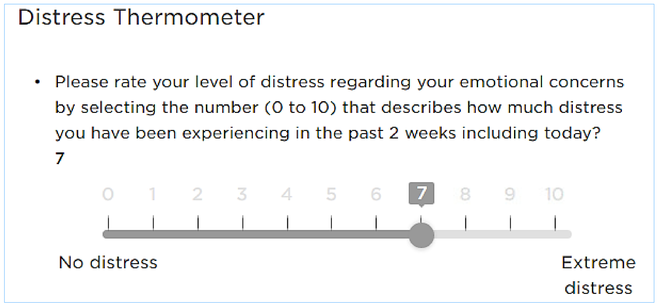


Table 1: Postoperative outcomes stratified by clinically significant preoperative distress (Distress Thermometer score ≥ 4).

Characteristic	Overall N = 1281[1]	Preoperative distress: No, N = 649 (51%)[1]	Preoperative distress: Yes, N = 632 (49%)[1]	p-value[2]
Pain clinic referral within 6 months	90 (7.0%)	35 (5.4%)	55 (8.7%)	0.020
PACU MME				<0.001
Median (Q1, Q3)	15 (4, 26)	11 (4, 23)	15 (7, 30)	
Min, Max	0, 160	0, 75	0, 160	
30-day UCC	42 (3.3%)	15 (2.3%)	27 (4.3%)	0.049
PACU LOS (hours)				>0.9
Median (Q1, Q3)	18.43 (16.62, 20.53)	18.37 (16.62, 20.57)	18.51 (16.60, 20.48)	
Min, Max	5.85, 28.42	5.93, 28.42	5.85, 26.87	
Prolonged PACU stay[3]	594 (46%)	293 (45%)	301 (48%)	0.4
Post-discharge modified quality of recovery total score				<0.001
Median (Q1, Q3)	70 (61, 77)	72 (65, 79)	67 (58, 74)	
Min, Max	7, 90	7, 90	12, 90	
Did not complete	205	104	101	
At least one pain severity red alert	269 (22%)	95 (16%)	174 (29%)	<0.001
Did not complete	78	46	32	
Number of pain severity red alert				<0.001
Median (Q1, Q3)	0 (0, 0)	0 (0, 0)	0 (0, 1)	
Min, Max	0, 8	0, 8	0, 7	
Did not complete	78	46	32	

1 n (%)
2 Pearson's Chi-squared test; Wilcoxon rank sum test
3 PACU discharge occurring after 11:30am on postoperative day 1
PACU, post anesthesia care unit; MME, oral morphine milligram equivalent; UCC, urgent care center; LOS, length of stay

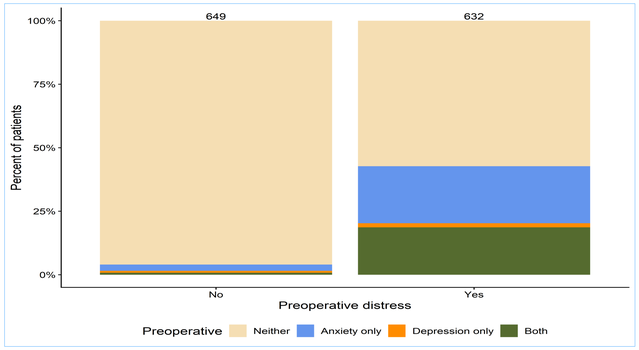


Figure 1. Distribution of preoperative anxiety and depression by preoperative distress status.

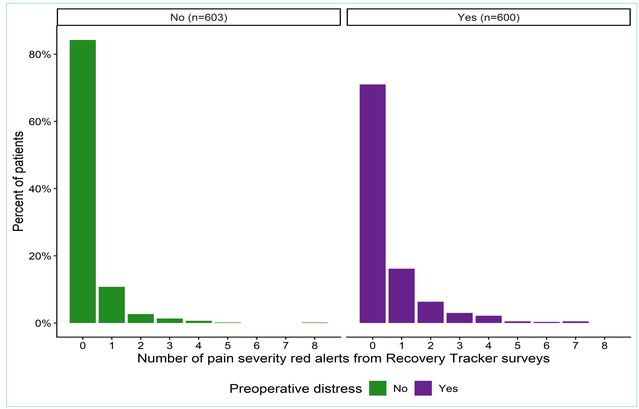


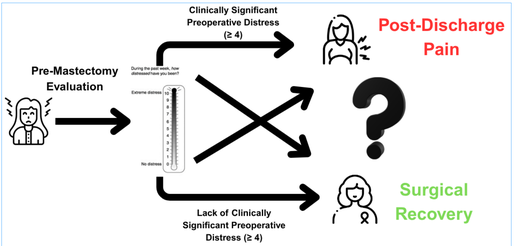
Figure 2. Number of pain severity red alerts (max 10) among patients who filled out any Recovery Tracker survey.

Results

- **49% (n = 632)** had clinically significant preoperative distress.
- Among distressed patients: **41% anxiety, 20% depression** (Figure 1).
- Distress associated with **increased** postoperative opioid use, greater pain severity, and worse quality of recovery.
- **29%** of distressed patients had ≥1 pain severity red alert vs. 16% ($p < 0.001$) (Figure 2)
- Pain clinic referral: 8.7% (distress) vs. 5.4% (no distress), however, this difference was **not significant after multivariable adjustment.**

Discussion

- The lack of significant association with pain clinic referral after adjustment suggests that distress overlaps with other psychosocial factors (e.g., anxiety, depression).
- Routine preoperative psychosocial screening may identify high-risk patients before surgery, enabling targeted interventions to mitigate downstream pain burden.



References: 1. Pak LM et al. *Ann Surg Oncol*. 2022; 2. Kroenke K et al. *Ann Intern Med*. 2007; 3. Löwe B et al. *J Psychosom Res*. 2005; 4. Cracchiolo JR et al. *JAMA Surg*. 2024; 5. Stark PA et al. *Anesthesiology*. 2013; 6. Donovan et al. Validation of the distress thermometer worldwide: state of the science. Psychooncology. 2014 Mar;23(3):241-50

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