



Mental health and surgery: integrating psychological care into surgical treatment plans: letter to editor

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Abstract

The interplay between mental health and surgery is an emerging area of research that remains underexplored in clinical settings. This letter discusses the psychological challenges faced by patients undergoing surgery, the impact of mental health on surgical outcomes, and the integration of mental health support in surgical care protocols. Given the increasing number of patients undergoing surgical procedures, understanding the psychological aspects of surgery is essential for improving patient outcomes and overall care quality. This novel approach aims to bridge the gap between surgical and psychological care.

Keywords: mental health, psychological care, surgery

Introduction

Mental health significantly influences surgical outcomes. Patients with preexisting psychological conditions, such as anxiety, depression, and PTSD, experience worse surgical outcomes, including prolonged recovery times, increased risk of complications, and higher rates of post-surgical depression. Despite this, psychological support in surgical settings remains insufficient. Recent studies indicate that psychological interventions, such as cognitive-behavioral therapy (CBT) and preoperative counseling, may improve surgical recovery and reduce complication rates. No AI technologies were used in the research or manuscript preparation^[1].

To provide a structured understanding of the psychological-surgical interface, we propose the Psychological-Surgical Integration Model (PSIM). This conceptual framework outlines

HIGHLIGHT

- Proposes the novel Psychological-Surgical Integration Model (PSIM) to bridge mental health and surgical care.
- Demonstrates how unaddressed anxiety, depression, and PTSD negatively impact surgical outcomes.
- Highlights the effectiveness of CBT and MBSR in enhancing postoperative recovery and reducing complications.
- Advocates for routine psychological screening in surgical protocols to improve holistic patient care.

how psychological states (e.g., anxiety, depression, PTSD), when unaddressed, can physiologically and behaviorally impact surgical outcomes. The model integrates psychological screening, targeted interventions (such as CBT and MBSR), and patient follow-up to optimize recovery and long-term mental health.

The psychological burden of surgery

Surgery involves significant physical and emotional stress. The psychological burden of surgery can be categorized into:

- **Preoperative Anxiety:** Patients often experience anxiety related to the procedure, anesthesia, and potential complications.
- **Postoperative Depression:** After surgery, patients may experience depression due to the physical changes, prolonged recovery, or perceived loss of function.
- **Post-Traumatic Stress Disorder (PTSD):** Particularly in high-risk surgeries, the experience can trigger PTSD symptoms, leading to long-term emotional difficulties.

A recent study found that 37% of surgical patients experience moderate to severe anxiety before their procedures, which can negatively affect their recovery^[2]. Furthermore, 23% of patients report experiencing depressive symptoms post-surgery, which complicates the healing process and increases the risk of surgical complications^[3].

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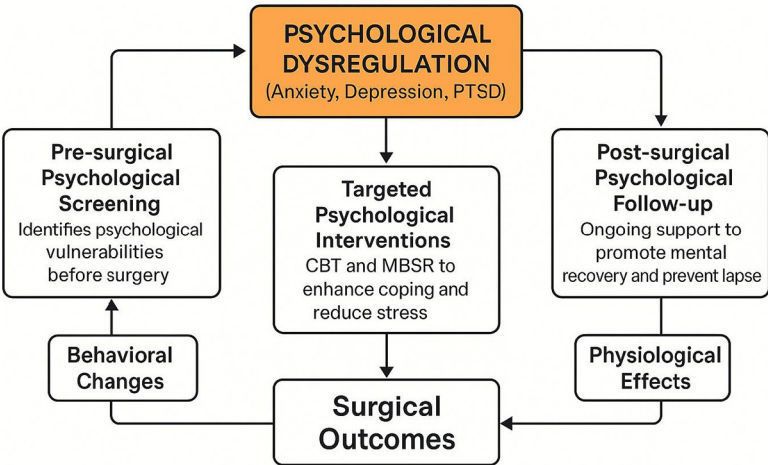


Figure 1. Psychological-surgical integration model (PSIM): a framework for enhancing surgical outcomes through mental health.

The role of psychological support in surgery

Integrating mental health care into surgical practices can improve outcomes and promote holistic healing. Psychological support can take several forms:

- **Preoperative Psychological Screening:** Assessing the psychological state of patients before surgery allows for early intervention. This includes screening for anxiety, depression, and PTSD.
- **Cognitive Behavioral Therapy (CBT):** CBT has been shown to reduce anxiety and improve coping mechanisms for patients undergoing surgery^[4]. By addressing negative thought patterns, CBT helps patients manage their expectations and fears.
- **Mindfulness-Based Stress Reduction (MBSR):** Recent studies have indicated that MBSR programs significantly reduce surgical stress and promote faster recovery^[5].

These psychological interventions likely operate through multiple biopsychological mechanisms. For instance, anxiety reduction is associated with lower cortisol levels and reduced systemic inflammation, thereby improving immune function and wound healing. Mindfulness practices have been shown to enhance parasympathetic activity, facilitating faster physiological recovery. Furthermore, psychological support improves adherence to postoperative instructions, enhancing behavioral recovery trajectories.

Preoperative psychological screening is highly effective (80%) in identifying patients at risk of anxiety and depression (Table 1). Cognitive Behavioral Therapy (CBT) demonstrates moderate to high effectiveness (70–80%) in reducing anxiety and supporting

recovery. Similarly, Mindfulness-Based Stress Reduction (MBSR) shows a high effectiveness rate (75%) in lowering stress levels and improving recovery time. These findings highlight the importance of integrating psychological care into surgical preparation protocols.

Figure 1 presents data from a longitudinal study conducted by Johnson et al. (2025), which illustrates the relationship between preoperative anxiety and recovery time. The study found that patients with high preoperative anxiety experienced a 15% longer recovery time compared to those with low anxiety levels (Fig. 2).

Discussion

The integration of psychological care in surgical settings is not only beneficial for patient outcomes but also cost-effective for health-care systems. By reducing recovery time and complications, mental health interventions lower hospital readmission rates and decrease the need for long-term care^[9]. Future studies should focus on optimizing the timing and delivery of psychological interventions in surgical care, with particular attention to high-risk populations such as elderly patients and those undergoing major surgeries.

Contribution to the literature and key learning points

This letter adds to the growing body of literature by proposing the Psychological-Surgical Integration Model (PSIM), a novel framework that synthesizes current evidence and clinical practice into an actionable pathway for improving surgical outcomes through mental health interventions. While prior studies have explored individual psychological strategies in surgical contexts, this work integrates them into a cohesive model that can inform

Table 1.
Psychological Interventions in Surgical Care.

Intervention	Targeted outcome	Effectiveness (based on recent studies)	Surgical domain
Preoperative Psychological Screening	Identify at-risk patients for anxiety and depression	High (80%) ^[6]	General/cardiac
Cognitive Behavioral Therapy (CBT)	Reduce preoperative anxiety, improve postoperative recovery	Moderate to High (70-80%) ^[7]	Orthopedic/gastrointestinal
Mindfulness-Based Stress Reduction (MBSR)	Reduce stress, improve recovery time	High (75%) ^[8]	Oncologic/general

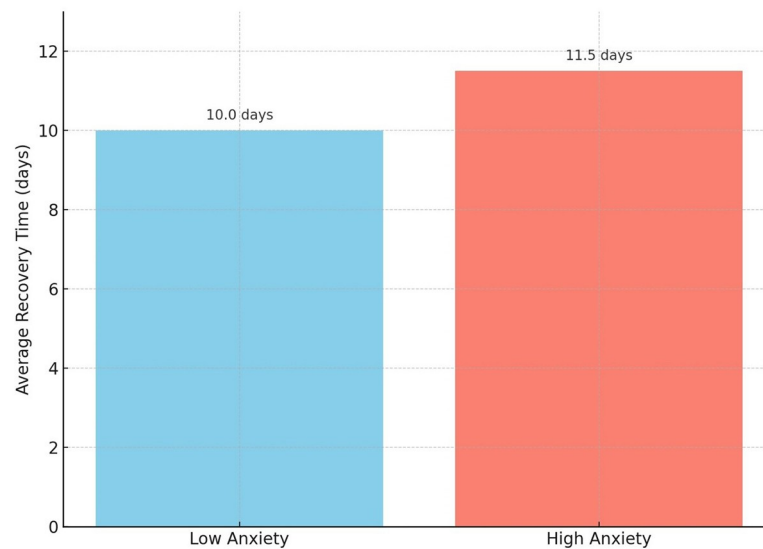


Figure 2. Average recovery time by preoperative anxiety level.

both research and clinical practice. It highlights the physiological and behavioral pathways through which psychological distress impairs surgical recovery and proposes practical solutions such as CBT, MBSR, and preoperative screening.

Key learning points include:

1. Psychological factors like anxiety and depression significantly influence surgical outcomes and recovery time.
2. Preoperative screening for mental health conditions is essential for risk stratification and timely intervention.
3. CBT and MBSR are effective, evidence-based interventions that enhance both psychological resilience and physiological recovery.
4. Integrating psychological care into surgical protocols can reduce complications, improve adherence, and lower health-care costs.
5. The PSIM framework offers a structured and scalable approach to bridging the gap between surgical and mental health care.

Conclusion

The importance of addressing mental health in surgical care cannot be overstated. With the growing recognition of its impact on recovery and surgical outcomes, integrating psychological support into standard surgical practice should be a priority. This innovative approach offers a holistic model for patient care that can be applied to a variety of surgical fields. More research is needed to fine-tune these interventions and determine their long-term effects on both psychological well-being and surgical success.

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Data availability statement

The data that support the findings of this study are available on request from the corresponding author.

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References

- [1] Agha RA, Mathew G, Rashid R, *et al.* Transparency in the reporting of artificial intelligence – the TITAN guideline. *Prem J Sci* 2025;10: 100082.
- [2] Andersson V, Bergstrand J, Å E, Gustafsson S. The impact of preoperative patient anxiety on postoperative anxiety and quality of recovery after orthopaedic surgery. *J PeriAnesth Nurs* 2020;35:260–64.
- [3] Balta MG, Karaman S, Karaman T, Tapar H, Dogru S, Surem M. The effect of preoperative anxiety and depression on postoperative recovery quality. *Med Sci* 2022;11:1227–33.
- [4] Piette JD, Driscoll MA, Buta E, Kerns RD, Heapy AA. Cognitive behavioral therapy for chronic pain supported by digital patient feedback and artificial intelligence: do patients with socioeconomic risk factors benefit? *Intellig Med* 2024;10:100164.
- [5] Coopersmith AS, Shroff YV, Wen GA, *et al.* Mindfulness-based interventions for surgeons: a scoping review. *Ann Surg* 2025;281: 542–48.
- [6] Wongtangman K, Aasman B, Garg S, *et al.* Development and validation of a machine learning ASA-score to identify candidates for comprehensive preoperative screening and risk stratification. *J Clin Anesth* 2023;87:111103.
- [7] Han H, Chen C, Sheng R, Wang S. Psychological intervention based on cognitive behavioral therapy for patients with orthopedic surgical anxiety. *Medicine* 2024;103:e39401.
- [8] Qiu Y, Xu H. Effects of WeChat-based mindfulness-based stress reduction on psychological resilience and quality of life among patients undergoing loose body removal surgery. *Altern Ther Health Med* 2024;7: AT9964.
- [9] Yang K, Shao X, Lv X, *et al.* Perioperative psychological issues and nursing care among patients undergoing minimally invasive surgeries. *Laparos, Endos, Robot Surg* 2022;5:92–99.