EDITORIAL

Nurse-led Enhanced Recovery after Surgery Programs: Potential Solution to Shorten Postoperative Recovery

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Keywords: Enhanced surgical recovery nursing program, Enhanced recovery after surgery, Nurse lead care, Postoperative complications.
Indian Journal of Critical Care Medicine (2025): 10.5005/jp-journals-10071-24883

Postoperative recovery is a critical aspect of surgical intervention, and much of the existing research focuses on short-term recovery indicators such as hospitalization duration, return to normal activities, and common postoperative symptoms like pain, bleeding, and nausea.[1] Nurse-led protocols in perioperative care hold great promise for enhancing such patient outcomes and are tied to advancing the quality of nursing practices in this field. With continued attention to the development of leadership capacity, policy support, and inter-professional partnerships, nursing research in perioperative care has the potential to play a transformative role in improving patient safety and care delivery in India.

Although there have been significant improvements in surgical techniques and perioperative care, abdominal surgery still carries risks of postoperative complications. This was reemphasized by Alaparthi et al., who observed a decline in pulmonary function following surgery.[2]

Enhanced recovery after surgery (ERAS) is an internationally recognized initiative aimed at providing all-inclusive care throughout the perioperative period. The concept of ERAS, initially termed "fast-track surgery," was developed by Professor Henrik Kehlet in the mid-1990s for patients undergoing colorectal surgery. Kehlet's research demonstrated that a multi-modal, evidence-based approach could significantly shorten postoperative recovery times. Building on these findings, the ERAS Society was established in 2010 to standardize and promote ERAS protocols across different surgical specialties.[3] Since its founding, ERAS guidelines have been developed for a range of procedures, including colorectal surgery, bariatric surgery, gastrectomy, liver surgery, and gynecologic oncology. The goal of ERAS is to minimize the physiological and psychological stress of surgery—promoting faster recovery, reducing complications, and shortening hospital stays. The protocol integrates various strategies such as preoperative education, nutritional optimization, multimodal analgesia, early mobilization, and reduced reliance on invasive techniques. A 2024 review explored the impact of ERAS protocols over the last decade across various surgical specialties all around the globe. Notably, almost 40% of this research was conducted in China and India. An average of 11.1 ERAS elements (out of 24) were incorporated, with an overall compliance rate of 74.7%.[4] The analysis revealed that ERAS when compared to traditional postoperative care, led to shorter hospital stays, reduced postoperative recovery time, and fewer 30-day complications.

The successful implementation of ERAS requires a multidisciplinary approach, involving not only surgeons and anesthesiologists but also nurses as well as ERAS coordinators (again often nurse specialists in the Western world), and other key healthcare personnel.[5]

One big ERAS execution hurdle is about nursing staff perception, who being overwhelmed with workload, may feel that the ERAS program will impose additional strain and complexity to their already time-constrained days. In their study, Pearsall et al. found that the majority of multidisciplinary team members identified insufficient human resources and an unreasonable human resource structure as key impediments to ERAS.[6] The success of the ERAS program depends a lot on caregivers' interactions with patients and the humanization of such interventions. Sriramka et al. examined the effectiveness of physical interventions, such as handholding and conversation, either alone or combined with midazolam, in alleviating preoperative anxiety in adult patients undergoing laparoscopic abdominal surgery. Their findings indicated that handholding and conversation-whether with or without midazolam were more effective at reducing preoperative anxiety than midazolam alone.[7] These findings underscore the critical importance of patient-caregiver synergy in the attainment of the primary ERAS objective, of alleviating stress while reducing the reliance on sedative medications and minimizing postoperative hospital stay.

In this issue of IJCCM, Barboza HR et al., add important insights about the effect of a nurse-led preoperative educational and rehabilitative intervention (ESRNP) on patients undergoing elective abdominal surgery.[8] The authors evaluated the psychological and physiological outcomes of this ESRNP at several time points (from the first to the third preoperative day). This quasi-experimental study carried out at a hospital in Karnataka, India, featured 142 patients randomized to either the treatment-as-usual (TAU) group or the experimental group. The TAU group received conventional preoperative care, including routine laboratory tests, prophylactic

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How to cite this article: Tyagi N. Nurse-led Enhanced Recovery after Surgery Programs: Potential Solution to Shorten Postoperative Recovery. Indian J Crit Care Med 2025;29(1):3–5.

Source of support: Nil

Conflict of interest: None

intravenous antibiotics, skin preparation, and bowel clearance, as well as typical postoperative care, which included continued antibiotics and analgesics for pain management. In contrast, the experimental group received additional nurses-led interventions, consisting of preoperative teaching through an instructional booklet regarding the procedure, psychological support through music listening and deep breathing exercises, and physiological rehabilitation with lower extremity exercises, early feeding, and early mobilization following surgery. State anxiety scores showed significant differences over time ($p < 0.001$), with the experimental group reporting lower postoperative anxiety levels compared to the treatment-as-usual group, indicating the effectiveness of ESRNP in reducing postoperative anxiety.[8]

Physiological outcomes, such as pain, pulse, respiration, and blood pressure also improved significantly in the experimental group ($p < 0.05$) at various observation points. Vital capacity increased significantly in the experimental group while decreasing in the treatment-as-usual group after surgery. Furthermore, the ESRNP was linked to a shorter postoperative hospital stay and fewer acute problems in the experimental group, demonstrating its overall efficacy in improving recovery outcomes.[8]

Patients' age significantly influences postoperative outcomes, as older individuals tend to experience higher mortality rates and greater complication risks due to physiological changes that can impair the body's ability to heal. In the current study, the majority of participants in both the experimental (62%) and TOU (63.4%) groups were between the ages of 41 and 60.8 This profile aligns with previous research from India, which assessed patients aged 18–65 years, for postoperative wound complications following abdominal surgery, thus allows for external validation of improved outcomes as well.[9]

Patient education is an important component of postoperative care, and the present study validates the findings of studies from other Asian countries having comparative demographic profiles and healthcare challenges.[8] Xu et al. similarly highlighted the benefits of preoperative education and nursing visits in lowering patient anxiety, particularly during laparoscopic surgeries.[10]

The results could inform future perioperative practices by demonstrating the potential advantages of incorporating educational and rehabilitation interventions into routine surgical care to improve patient outcomes both psychologically and physiologically.

The ERAS program has become an established strategy to improve preoperative fasting-related complications by stressing carbohydrate-rich diet and markedly shorter preoperative fasting, which are combined with early postoperative feeding. Its effectiveness in shortening hospital stays for gastric cancer patients is well demonstrated.[11] The ERNSP program additionally led to shorter postoperative hospital stays and fewer impediments, underscoring its potential to enhance recovery after surgery.[8]

Despite demonstrating a 35% decrease in hospital stays, that too without increasing readmissions or complications, ERAS adoption has been limited in India. A first-of-its-kind survey assessed anesthesiologists' awareness and implementation of the ERAS protocol at the pan India level. The findings indicated that 89.4% of anesthesiologists were aware of the ERAS concept, with 80.6% implementing goal-directed fluid therapy in major gastrointestinal surgeries. On the other hand, the study also revealed significant variability in compliance within ERAS components, particularly the ones demanding out-of-theatre time expenditure, on the part of the operative team. The main barriers to full implementation were concerns about complications and administrative challenges.[12]

The other less discussed if not entirely overlooked barrier is the patient's confidence in ERAS protocol. A review article has demonstrated that gaining a deeper understanding of patients' impressions and how this affects their compliance regarding ERAS protocols.[13] It is important to note that the authors observed that patients' apprehensions regarding the ERAS program including – structure, process and outcomes, dating back since 2003, were not significantly different to those reported in studies published as recently as 2021. Some of the ERAS postoperative components like minimal analgesia, early feeding and mobilization, directly contradict the traditional societal beliefs of requiring gut rest and staying in bed to recover after surgery. Overzealous implementation of such analgesic reduction in post-surgical period has been associated with Ineffective relief of severe symptoms, leading to slower recovery times and prolonged hospital stays. This not only increased patients' insecurity but diminished their trust in healthcare professionals as well, proving completely counterintuitive to ERAS philosophy.[14]

The minimal time spent by surgeons explaining the entire perioperative journey to patients and families do not make the further implementation of ERAS anyway easier. Rather it's well observed that patients find it much easier to communicate and confide their anxieties about procedures or recovery with nurses than physicians.[10,15]

Historically, nursing research in India has concentrated on community health, maternal care, and infectious diseases, with a limited focus on perioperative care. Additionally, institutional and cultural barriers may hinder nurses' participation in research and decision-making processes. There are significant opportunities for growth, particularly through interdisciplinary collaborations.

Out here in India, where surgical volumes are high with long wait periods and healthcare means are stretched to the maximum, adopting ERAS can help optimize hospital resources.

Healthcare systems where skewed physician-patient ratios limit pre and postoperative interactions, need to prioritize similar nurse-led ESRNP programs, considering the long-term concern of a rapidly growing geriatric population and ever-increasing burden of oncology diseases, which will eventually need many more surgical interventions.

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