Impact of Managing Postoperative Anxiety on Anesthesia Requirements and Recovery Outcomes

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ABSTRACT:
Background: Studies show postoperative anxiety functions as a major determinant which affects patients' anesthetic needs and recovery process results. Anxiety when left unmanaged results in both enhanced anesthetic drug needs and extended recovery times which harms patient results and expands healthcare expenses.
Aim: Researchers conducted this study to evaluate the connection between postoperative anxiety management techniques with surgical patients' anesthetic needs and postoperative healing period.
Methods: A two-month observational research took place at Allied Hospital Faisalabad from 2024 February to January 2025. One hundred patients judged for elective surgical procedures participated in this research. The study divided its participants into groups which received different forms of postoperative anxiety management interventions or standard postoperative treatments. Study participants received evaluation for their anesthesia usage and regaining consciousness period alongside pain scoring and hospital stay duration and reported anxiety assessment.
Results: Patients receiving anxiety management interventions needed reduced amounts of anesthetic drugs ($p < 0.05$) with shortened anesthesia emergence times ($p < 0.05$). The patients who received anxiety management treatment displayed reduced anesthetic agent dosages and shorter emergence phases and better pain control after surgery and spent less time in hospital than participants in the control group. The intervention group reached significantly lower anxiety test results after the intervention ($p < 0.01$).
Conclusion: Postoperative anxiety management achieved two critical functions through reduction of anesthesia needs while simultaneously improving patient outcomes. The implementation of organized anxiety management techniques within postoperative treatment enhances patient comfort alongside hospital stay reductions which delivers better surgical results.
Keywords: Postoperative anxiety, anesthesia requirements, recovery, pain management, hospital stay, surgical outcomes.

INTRODUCTION:

Medical professionals acknowledged postoperative anxiety as a main psychological determinant which impacts surgical recovery results. The anxiety that follows surgical procedures produces two simultaneous effects: it elevates patients' pain experiences and it creates physiological disturbances that might slow down recovery time. Anxiety levels appeared high in patients during both the preoperative period and the postoperative period according to various research studies [1]. Multiple studies monitored preoperative anxiety yet postoperative anxiety together with its handling techniques barely received examination despite their extensive impact on anesthesia dosage and post-surgical recovery period.

Medical studies show that exercising psychological stress on patients during the perioperative stage frequently evolves into stronger postoperative stress responses. Research shows that elevated anxiety creates various physiological impacts which include intensified sympathetic nervous system activation, elevated cortisol production and sleep dysfunctions and reduced immune system response throughout the postoperative period. Research has shown that these physical disturbances led to patients needing longer hospitalizations while making their wounds heal slower and increasing their risk of developing further conditions including infections and cardiovascular complications [3].

Research has shown that anxiety produces effects on the pharmacological behavior of anesthesia and analgesia. People who fail to control their anxiety need greater doses of anesthetic drugs together with sedative medicine during additional procedures which heightens their risk of adverse drug side effects. The lack of anxiety management produces weaker analgesic effects that lead patients to use additional medication causing delayed recovery and inferior patient satisfaction [4].

The concerns related to patient anxiety enabled the scientific community to understand the need for anxiety management approaches in postoperative care. Medical professionals established cognitive-behavioral therapy (CBT) together with relaxation exercises and guided imagery and music therapy and pharmacological interventions as techniques for postoperative anxiety relief. Medical professionals utilized these techniques for stabilizing mental health status combined with diminished pain awareness and better sleep while advancing patient commitment to rehabilitation plans [5]. Analgesic and postoperative recovery metrics showed inconsistent results and inadequate evidence from research studies about the effects of anesthesia-related interventions supported by theory and clinical practice.

The relationship between anxiety treatment strategies and clinical results becomes vital for enhanced recovery after surgery (ERAS) since these protocols focus on patient-driven methods that shorten hospital stays and improve results. The proper control of postoperative anxiety showed promise to decrease both sedatives and analgesics utilization and promote expedited patient movements after surgery thus improving recovery outcomes [6]. Multiple factors including the use of different anxiety interventions and differences between patient characteristics and surgical conditions resulted in the absence of standard best practices.

The researchers conducted this research to evaluate the impact of anxiety management protocols on anesthesia consumption and postoperative healing processes. The study aimed to improve understanding about mental health approaches within postoperative care by analyzing psychological intervention effects on drug and recovery metric changes [7]. The research findings aimed to support existing scholar work which promotes comprehensive surgical recovery frameworks which equally value psychological health alongside physical healthcare [8].

MATERIALS AND METHODS:

The descriptive analytical study took place at Allied Hospital Faisalabad with the main goal of assessing the influence of postoperative anxiety management on anesthesia demand alongside postoperative recovery results. The research period extended from February 2024 to January 2025 throughout twelve months. The research sample consisted of 100 patients who were included by purposive sampling. A selection of subjects came from surgical wards combined with operation theaters where they underwent elective procedures needing general anesthesia.

The study included male and female patients who fit within the age range of 18 to 60 years and had ASA physical status classifications of either I or II undergoing non-emergency surgical procedures. The research excluded individuals who demonstrated psychiatric conditions as well as substance dependence or persistent pain syndromes or had prolonged usage of anxiolytic drugs or antidepressants.

Each participant issued a written informed consent before joining the study. Our research implementation received approval from the Institutional Ethical Review Board of the hospital. The research study divided

patients into two separate groups: the intervention group (Group A) included fifty participants along with fifty individuals in the control group (Group B).

The individuals in Group A received a structured anxiety management intervention between surgeries that applied cognitive behavioral therapy counseling with breathing exercises and low-dose preoperative lorazepam administration (1 mg orally). Skilled nursing staff together with clinical psychologists provided the intervention delivery. Standard perioperative care served Group B as they did not receive any anxiety management system based interventions.

Researchers used the State-Trait Anxiety Inventory (STAI) to conduct stress tests among all subjects prior to surgical procedures. During intraoperative monitoring the total amount of propofol and isoflurane or sevoflurane anesthesia agents received analysis for anesthesia assessment. The Bispectral Index (BIS) monitor helped maintain uniform anesthesia depth between 40 and 60 in all patients for study purpose. Postoperative recovery assessment included monitoring multiple variables which included times for extubation, reaching an Aldrete score of 9 in recovery and PONV incidence and hospital stay duration. The assessment of postoperative pain intensity occurred through Visual Analog Scale (VAS) measurements obtained at 2, 6 and 24 hours after surgery. The subjective assessment included the STAI for evaluating postoperative anxiety on day 1 after surgery.

The research team obtained data through standardized questionnaires while the analysis occurred with SPSS version 26. Data summary utilized both descriptive statistics that included mean values, standard deviation measurements and frequency rates and percentage breakdowns. The study applied independent t-tests for analyzing differences in anesthetic dosage and recovery duration between the treatment groups of patients. Analysis using Chi-square tests evaluated categorical data points regarding both PONV cases and delayed recovery outcomes. The research determined that a p-value lower than 0.05 demonstrated statistical significance.

The research design provided a complete evaluation of methods used to decrease necessary anesthesia amounts and improve postoperative patient outcomes which led to better perioperative treatment practices.

RESULTS:

Table 1: Comparison of Anesthesia Requirements Between Groups A and B:

Parameter	Group A (n = 50)	Group B (n = 50)	p-value
Mean Induction Dose of Propofol (mg)	105.2 ± 12.4	122.8 ± 15.1	<0.001
Mean Intraoperative Fentanyl Dose (µg)	150.6 ± 20.3	180.4 ± 22.7	<0.001
Need for Intraoperative Sedation (%)	18%	40%	0.012

The research data present in Table 1 shows a clear distinction in anesthetic dosage between Study Subjects A and B. Participants in Group A needed less propofol and fentanyl anesthesia during surgery because they received postoperative anxiety management which included guided breathing and brief counseling and music therapy. The subjects in Group A received propofol dosages of 105.2 ± 12.4 mg for anesthetic induction while Group B patients needed 122.8 ± 15.1 mg ($p < 0.001$). Fentanyl consumption during the procedure reached 150.6 ± 20.3 µg in Group A while reaching 180.4 ± 22.7 µg in Group B ($p < 0.001$). Patients in Group A received fewer intraoperative sedation requests during procedures since their percentage was 18% lower than in Group B at 40% ($p = 0.012$).

Table 2: Comparison of Postoperative Recovery Parameters:

Parameter	Group A (n = 50)	Group B (n = 50)	p-value
Time to First Ambulation (hours)	7.2 ± 1.3	10.1 ± 1.9	<0.001

Length of Hospital Stay (days)	2.8 ± 0.6	4.1 ± 0.9	<0.001
Postoperative Pain Score (VAS, 0–10)	3.5 ± 1.1	5.6 ± 1.3	<0.001
Incidence of Postoperative Nausea (%)	10%	28%	0.016
Patient Satisfaction Score (1–10 scale)	8.7 ± 0.9	6.1 ± 1.2	<0.001

Table 2 demonstrated different postoperative recovery outcomes based on the management of patient anxiety according to Group A and Group B. The subjects in Group A achieved quicker rehab milestones as they required less time to become mobile (7.2 ± 1.3 hours) and needed fewer days in the hospital (2.8 ± 0.6 days) than Group B participants who took 10.1 ± 1.9 hours to begin walking and remained in the facility for 4.1 ± 0.9 days ($p < 0.001$ for both comparisons). The patients in Group A experienced less postoperative pain compared to Group B participants with VAS scores reaching 3.5 ± 1.1 versus 5.6 ± 1.3 ($p < 0.001$). Results showed that postoperative nausea affects fewer patients in the intervention group than in the control group ($p = 0.016$). Patients who received Gastric Bypass reported better satisfaction ratings at 8.7 ± 0.9 compared to 6.1 ± 1.2 in the control group with $p < 0.001$ values which reflected superior postoperative recovery.

DISCUSSION:

Researchers analyzed how postoperative anxiety treatment affects the amount of anesthesia necessary as well as recovery results after surgical procedures. The results proved that specific postoperative anxiety treatment methods decreased the necessary anesthesia dose volume and enhanced recovery characteristics such as lowered pain levels and accelerated rehabilitation time as well as shortened hospital periods [9]. Research findings matched earlier studies which demonstrated the intricate relationship between psychological health and surgical as well as anesthetic physiological effects.

Medical patients receiving systematic postoperative anxiety care incorporating relaxation therapy with counseling and anxiolytic medications required less medication during their operations. The research demonstrated that anxiety which emerges after surgery will retrospectively impact stress reactions during the perioperative period and thus modify blood pressure control and pain tolerance [10]. The lowered stress hormone levels especially cortisol and catecholamines play a role in this observation according to previous research which shows these hormones influence anesthetic requirements through increased sympathetic nervous system activity.

The research demonstrated that patients whose anxiety was managed had substantial enhanced recovery success rates. The participants showed decreased pain ratings in standardized assessments and they received less postoperative pain medication. The study findings backed the view that anxiety makes pain more intense due to the suspected role of central sensitization alongside hypervigilance processes [11]. Healthcare quality improved through early psychological care which reduced patients' pain thresholds thus producing greater comfort and satisfaction.

The duration of hospital stay showed significant differences between the studied groups. Hospital stay duration decreased for patients who got anxiety management methods when compared to others who received no similar assistance. This outcome resulted from early mobilization that the intervention group received more often. Early mobilization remains established as a proven method to decrease venous thromboembolism complications and speed up patients' recovery to baseline functional abilities [12]. Lowering of anxiety levels could have improved postoperative patients' psychological preparedness to participate in recovery activities thus enhancing their willingness to participate in rehabilitation programs. The majority of patients experienced positive results from non-pharmacologic anxiety treatments but specific cases needed pharmacologic anxiolytics for adequate management. The different anxiety levels of patients demonstrated the requirement to develop personalized treatment approaches that consider individual severity levels and personal preferences. The research emphasized how physicians together

with surgeons should join forces with nursing staff and mental health specialists to enhance the quality of perioperative treatment [13].

Similar to the positive outcomes the study included specific limitations in its research design. Although sufficient for initial conclusions the actual patient population distribution remains slightly untapped due to this sample size. The study used subjective pain and anxiety scales which posed the risk of participant reporting bias to the research results. The investigators should have conducted additional research on anxiety management effects across long-term recovery because it presents promising potential for subsequent studies [14].

The research results highlighted that proper postoperative anxiety care helps decrease anesthesia needs and produces better recovery results. Establishing psychological care through standardized approaches within standard postoperative practices proves to be an effective approach for maximizing healthcare results from both patient and clinical perspectives. Additional extensive research focused on surgical patients needs to confirm these results while developing standardized assessment methods for anxiety and treatment protocols for surgical anxiety care [15].

CONCLUSION:

The study revealed that proper postoperative anxiety treatment resulted in reduced anesthesia requirements together with better postoperative recovery results. Patients who received targeted anxiety-reducing interventions needed lower anesthetic drug amounts during operations as well as shorter recovery periods with decreased postoperative pain and lower complication rates. Patients in the intervention group received better psychological care that led to improved psychological outcomes following surgery. This shows that anxiety management strategies directly enhance healthcare results. Standard perioperative protocols must include psychological care components because the study results proved that patients experienced better physical and emotional outcomes. Enhanced surgical care quality results from postoperative anxiety management since it promotes both better patient comfort alongside optimized clinical performance. The research outcomes advocate for making anxiety assessments routine and interventions standard in full-scale postoperative care strategies.

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