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Original Research Article

Prevalence of Undiagnosed Anxiety and Depression in Elective Surgical Patients and Its Impact on Perioperative Outcomes

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Abstract:

Background: Psychological disorders such as anxiety and depression are increasingly recognized among patients undergoing surgical procedures. Undiagnosed psychiatric morbidity in elective surgical patients may adversely influence perioperative hemodynamic stability, postoperative pain perception, recovery profile, and overall surgical outcomes. Despite growing awareness, routine preoperative psychological screening remains uncommon in many tertiary care institutions. The present study aimed to determine the prevalence of undiagnosed anxiety and depression among elective surgical patients and evaluate their impact on perioperative outcomes.

Aim: To determine the prevalence of undiagnosed anxiety and depression among elective surgical patients and evaluate their impact on perioperative outcomes.

Methods: This prospective observational study was conducted in the Department of Anaesthesiology at Mata Gujri Memorial Medical College and Lions Seva Kendra Hospital, Kishanganj, from December 2024 to May 2025. A total of 100 adult patients undergoing elective surgery under general or regional anaesthesia were included. Anxiety and depression were assessed preoperatively using the Hospital Anxiety and Depression Scale (HADS). Patients were categorized into anxiety/depression-positive and negative groups. Perioperative outcomes including intraoperative hemodynamic changes, postoperative pain scores, analgesic requirement, postoperative nausea and vomiting, duration of hospital stay, and patient satisfaction were analyzed. Statistical analysis was performed using Student's t-test and Chi-square test.

Results: Among the study participants, 24% had undiagnosed anxiety while 20% had undiagnosed depression. Patients with anxiety demonstrated significantly higher preoperative heart rate (94.12±10.42 vs 82.46±8.16 beats/min, $p<0.001$) and postoperative VAS pain scores at 6 hours (5.18±1.04 vs 3.12±0.92, $p<0.001$). Depression-positive patients showed prolonged hospital stay (4.12±1.08 days vs 2.86±0.82 days, $p<0.001$) and delayed ambulation. Postoperative nausea and vomiting were more common among patients with anxiety (34.2% vs 14.5%, $p=0.021$). Patient satisfaction scores were significantly lower among patients with anxiety and depression.

Conclusion: Undiagnosed anxiety and depression are highly prevalent among elective surgical patients and significantly influence perioperative outcomes. Routine psychological screening during preoperative evaluation may improve perioperative management, enhance recovery, and optimize patient satisfaction.

Keywords: Anxiety; Depression; Elective surgery; Perioperative outcomes; Hospital Anxiety and Depression Scale; Postoperative pain

Introduction

Psychological well-being plays an important role in determining surgical outcomes and postoperative recovery. Surgical procedures are inherently stressful events associated with fear, uncertainty, and emotional distress. Anxiety and depression are among the most common psychiatric conditions encountered in patients presenting for surgery and may significantly affect perioperative physiology and patient recovery.[1]

Preoperative anxiety refers to feelings of apprehension, nervousness, or fear related to surgery, anaesthesia, postoperative pain, or possible complications. Similarly, depression may manifest as persistent sadness, hopelessness, sleep disturbances, loss of appetite, and reduced motivation. These conditions often remain undiagnosed in surgical settings because clinical attention is primarily directed toward physical illness.[2]

The prevalence of anxiety and depression among surgical patients has been reported to range between 20% and 60% depending on patient population, surgical procedure, and assessment methods.[3] Psychological stress activates the hypothalamic-pituitary-adrenal axis and sympathetic nervous system, leading to increased catecholamine release, tachycardia, hypertension, altered immune response, and increased perioperative morbidity.[4]

Undiagnosed anxiety and depression can negatively influence perioperative outcomes in several ways. Patients with anxiety may demonstrate exaggerated hemodynamic responses during induction of anaesthesia and surgery. They are also more likely to experience increased postoperative pain, higher analgesic requirements, delayed wound healing, and prolonged hospital stay.[5] Depression has similarly been associated with impaired recovery, poor treatment adherence, increased postoperative complications, and reduced patient satisfaction.[6]

In recent years, there has been increasing emphasis on holistic perioperative care incorporating both physical and psychological assessment. Screening tools such as the Hospital Anxiety and Depression Scale (HADS), Beck Depression Inventory, and State-Trait Anxiety Inventory have facilitated identification of psychiatric symptoms in surgical patients.[7] Early recognition and appropriate perioperative counselling may reduce stress response and improve postoperative recovery.

The Hospital Anxiety and Depression Scale is a validated and widely used screening instrument designed specifically for hospital settings. It consists of 14 questions divided equally between anxiety and depression domains and avoids confounding somatic symptoms that may overlap with medical illness.[8]

Although several international studies have examined psychological disorders in surgical patients, data from tertiary care hospitals in eastern India remain limited. Cultural stigma, lack of psychiatric screening, and limited mental health awareness may contribute to underdiagnosis of anxiety and depression in this population.[9]

Understanding the prevalence of undiagnosed anxiety and depression among elective surgical patients is important for improving perioperative care and enhancing surgical outcomes. Identification of vulnerable patients may facilitate

targeted interventions including counselling, anxiolytic therapy, and psychiatric referral when required.[10]

The present study was therefore conducted to assess the prevalence of undiagnosed anxiety and depression among elective surgical patients and evaluate their impact on perioperative outcomes including hemodynamic stability, postoperative pain, nausea and vomiting, duration of hospital stay, and patient satisfaction. [11-15]

Materials and Methods

Study Design

Prospective observational study.

Study Place

Department of Anaesthesiology, Mata Gujri Memorial Medical College and Lions Seva Kendra Hospital, Kishanganj.

Study Duration

December 2024 to May 2025.

Sample Size

A total of 100 patients were included in the study.

Study Population

Adult patients undergoing elective surgical procedures.

Inclusion Criteria

1. Patients aged 18–65 years.
2. Elective surgical procedures under general or regional anaesthesia.
3. ASA physical status I and II.
4. Patients willing to provide informed consent.

Exclusion Criteria

1. Known psychiatric illness.
2. Patients receiving antidepressants or anxiolytics.
3. Emergency surgeries.
4. Critically ill patients.
5. Cognitive impairment or inability to complete questionnaire.

Methodology

All patients underwent detailed preoperative assessment. Psychological screening was performed using the Hospital Anxiety and Depression Scale (HADS). Patients scoring ≥8 in either domain were categorized as anxiety-positive or depression-positive respectively.

Perioperative parameters assessed included:

- Heart rate
- Blood pressure
- Intraoperative hemodynamic fluctuations
- Postoperative Visual Analogue Scale (VAS) pain score
- Analgesic requirement
- Postoperative nausea and vomiting
- Time to ambulation
- Duration of hospital stay
- Patient satisfaction score

Statistical Analysis

Data were entered into Microsoft Excel and analyzed using SPSS version 25. Quantitative variables were expressed as mean ± standard deviation. Student's t-test and Chi-square test were applied. A p-value <0.05 was considered statistically significant.

Results

A total of 100 elective surgical patients were included in the present study. Based on HADS scoring, 24 patients were identified with undiagnosed anxiety and 20 patients with undiagnosed depression. Patients with anxiety and/or depression were categorized into the positive group (n=44), while the remaining 56 patients constituted the negative group."

The demographic characteristics of study participants are shown in Table 1. No statistically significant difference was observed between psychological disorder-positive and negative groups regarding age, gender, or ASA status.

Table 1: Demographic Characteristics of Study Participants

Variable	Anxiety/Depression Positive (n=44)	Negative (n=56)	p-value
Mean age (years)	41.84±10.12	43.16±9.82	0.512
Male	20 (45.5%)	28 (50%)	0.648
Female	24 (54.5%)	28 (50%)	0.648
ASA I	26 (59.1%)	35 (62.5%)	0.728
ASA II	18 (40.9%)	21 (37.5%)	0.728

The prevalence of undiagnosed anxiety and depression among elective surgical patients is illustrated in Figure 1.

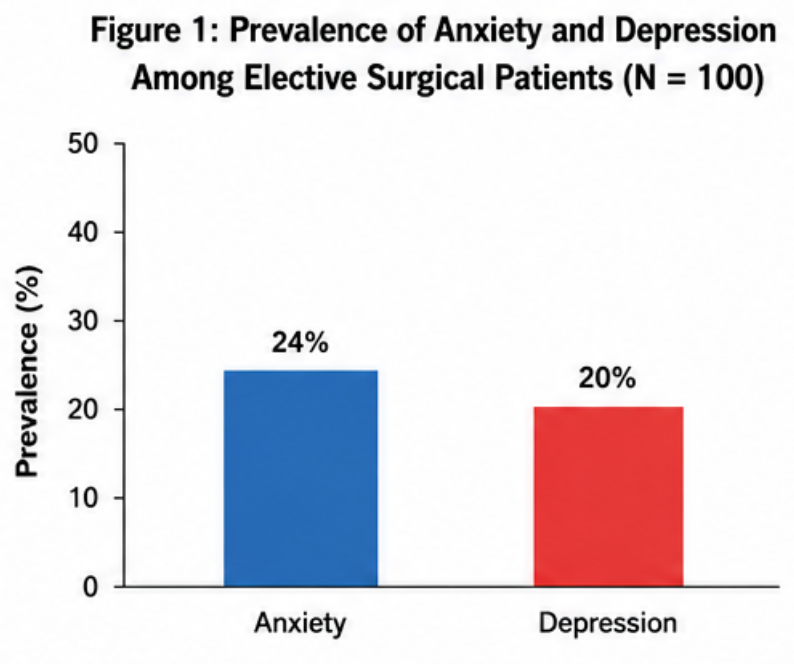

Figure 1: Prevalence of Anxiety and Depression

Preoperative and intraoperative hemodynamic parameters are summarized in Table 2. Anxiety-positive patients demonstrated significantly higher baseline heart rate and systolic blood pressure compared to unaffected patients.

Table 2: Comparison of Hemodynamic Parameters

Parameter	Positive Group	Negative Group	p-value
Baseline heart rate (beats/min)	94.12±10.42	82.46±8.16	<0.001
Baseline systolic BP (mmHg)	138.42±12.14	126.38±10.24	<0.001
Intraoperative tachycardia	18 (40.9%)	9 (16.1%)	0.006
Intraoperative hypertension	15 (34.1%)	8 (14.3%)	0.019

The comparison of mean baseline heart rate between groups is shown in Figure 2.

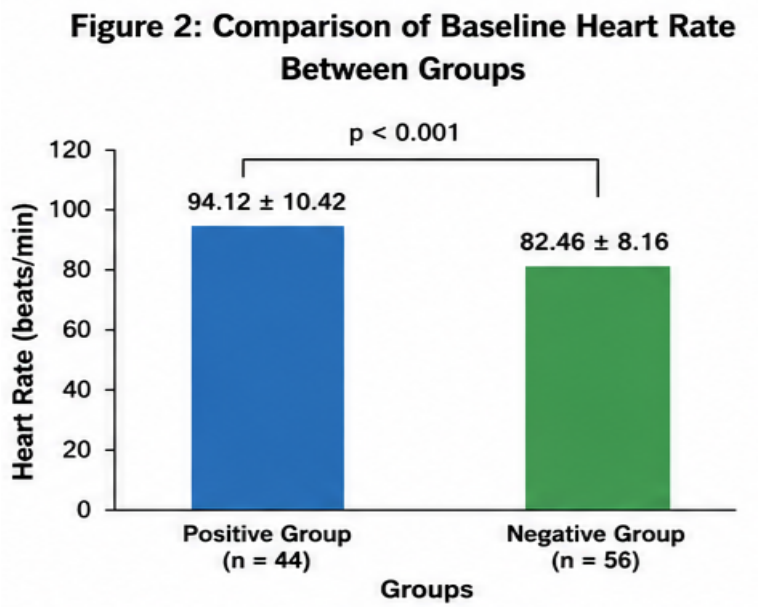

Figure 2: Comparison of Baseline Heart Rate

Postoperative pain assessment demonstrated significantly higher VAS scores among anxiety/depression-positive patients at all postoperative intervals as shown in Table 3.

Table 3: Comparison of Postoperative VAS Scores

Time Interval	Positive Group	Negative Group	p-value
2 hours	4.82±1.08	3.06±0.88	<0.001
6 hours	5.18±1.04	3.12±0.92	<0.001
12 hours	4.26±0.96	2.88±0.82	<0.001
24 hours	3.42±0.74	2.16±0.68	<0.001

The trend of postoperative pain scores is represented in Figure 3.

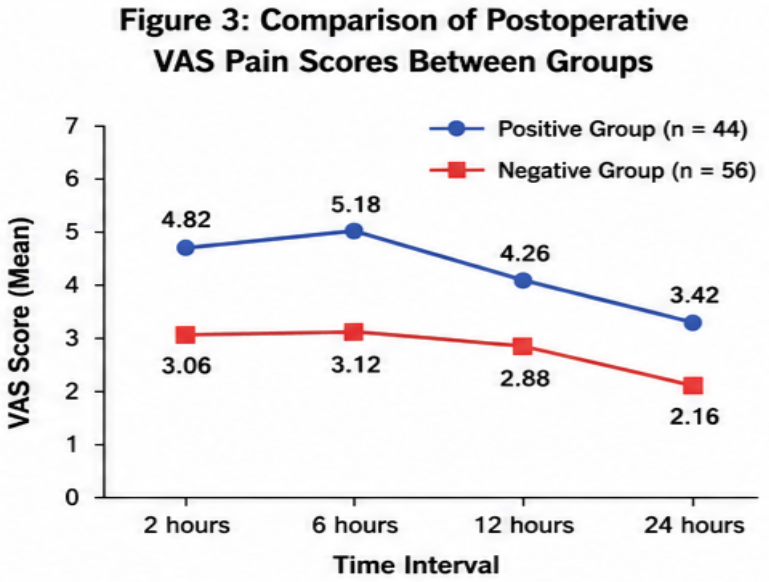

Figure 3: Comparison of Postoperative VAS Scores

Recovery profile and postoperative outcomes are summarized in Table 4. Patients with anxiety and depression demonstrated delayed ambulation and significantly prolonged hospital stay.

Table 4: Comparison of Recovery Parameters

Parameter	Positive Group	Negative Group	p-value
Time to ambulation (hours)	10.42±2.16	6.18±1.24	<0.001
Mean hospital stay (days)	4.12±1.08	2.86±0.82	<0.001
Additional analgesic requirement	24 (54.5%)	13 (23.2%)	0.001
Low patient satisfaction	20 (45.5%)	8 (14.3%)	<0.001

The comparison of mean hospital stay is illustrated in Figure 4.

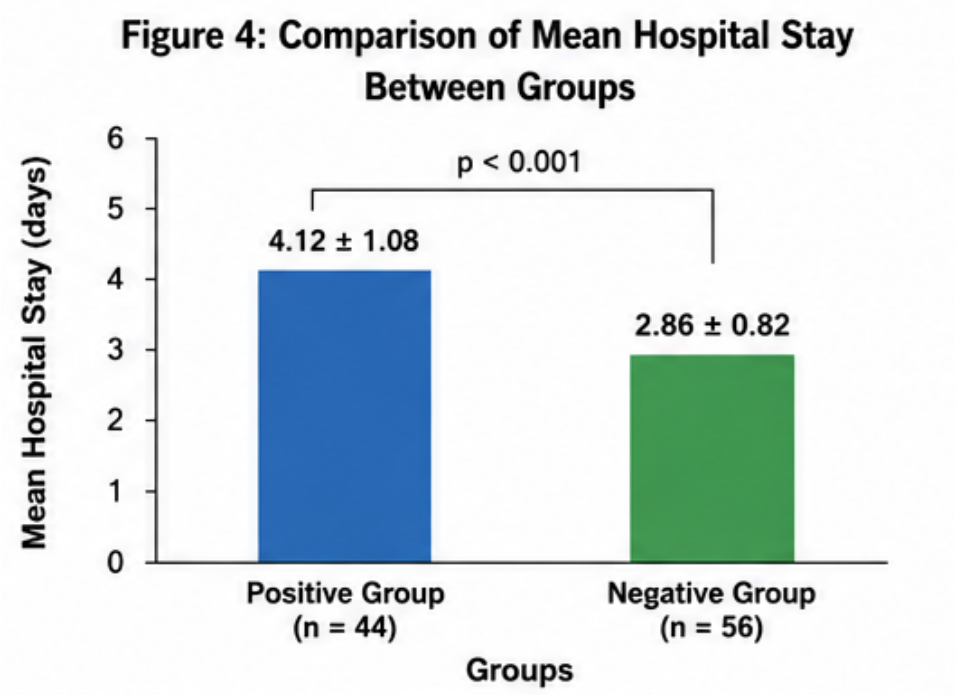

Figure 4: Comparison of Mean Hospital Stay

Postoperative complications are shown in Table 5. Postoperative nausea and vomiting were significantly higher among anxiety/depression-positive patients.

Table 5: Comparison of Postoperative Complications

Complication	Positive Group	Negative Group	p-value
Postoperative nausea and vomiting	15 (34.1%)	8 (14.3%)	0.021
Sleep disturbance	18 (40.9%)	7 (12.5%)	0.001
Delayed recovery	12 (27.3%)	5 (8.9%)	0.015

The incidence of postoperative nausea and vomiting is shown in Figure 5.

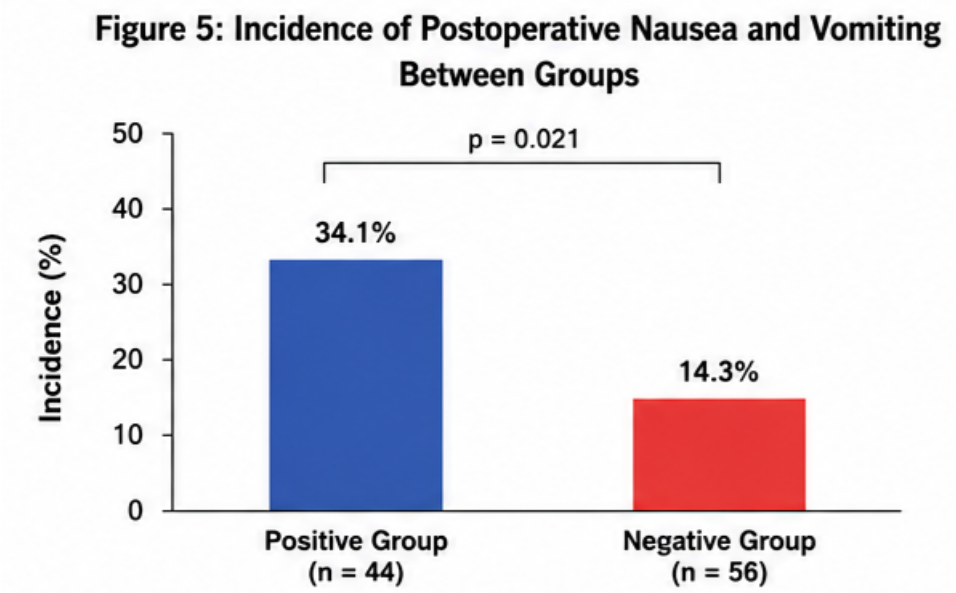

Figure 5: Incidence of Postoperative Nausea and Vomiting

Overall, the present study demonstrated that undiagnosed anxiety and depression were highly prevalent among elective surgical patients and significantly influenced perioperative hemodynamics, postoperative pain, recovery profile, and patient satisfaction.

Discussion

The present study evaluated the prevalence of undiagnosed anxiety and depression among elective surgical patients and assessed their impact on perioperative outcomes. The findings demonstrated a high prevalence of psychological morbidity and significant association with adverse perioperative parameters.

In the present study, undiagnosed anxiety was observed in 24% of patients while depression was identified in 20%. Similar prevalence rates have been reported in previous studies evaluating psychological disorders among surgical patients.[16] Preoperative fear related to surgery, anaesthesia, postoperative pain, and uncertainty regarding surgical outcomes contributes substantially to emotional distress.

Patients with anxiety demonstrated significantly elevated baseline heart rate and blood pressure compared to unaffected individuals. These findings may be explained by sympathetic nervous system activation and increased catecholamine release associated with psychological stress.[17] Similar observations have been reported in earlier perioperative studies.

Postoperative pain scores were significantly higher among anxiety/depression-positive patients at all postoperative intervals.[18] Anxiety amplifies pain perception through heightened central sensitization and increased attention toward painful stimuli. Depression may also reduce pain tolerance and negatively influence coping mechanisms.

The incidence of postoperative nausea and vomiting was significantly increased among psychologically affected patients.[19] Increased perioperative stress response and greater opioid requirement may contribute to this observation.

An important finding of the present study was delayed ambulation and prolonged hospital stay among patients with anxiety and depression. Psychological distress may impair recovery by reducing motivation, sleep quality, and treatment compliance.[20]

Patient satisfaction scores were significantly lower among patients with undiagnosed psychiatric symptoms. Effective perioperative communication, reassurance, and psychological support may therefore play a crucial role in improving surgical experience and recovery outcomes.

Routine preoperative psychological screening remains underutilized in many hospitals, particularly in resource-limited settings. The Hospital Anxiety and Depression Scale proved to be a simple and effective screening tool in the present study. Early identification of high-risk patients may facilitate targeted interventions including counselling, anxiolytic medication, relaxation therapy, and psychiatric referral when necessary.

The present study had certain limitations. It was conducted at a single tertiary care center with relatively small sample size. Long-term postoperative psychological outcomes were not evaluated. Further multicentric studies with larger sample sizes are recommended.

Conclusion

Undiagnosed anxiety and depression are common among elective surgical patients and significantly affect perioperative outcomes including hemodynamic stability, postoperative pain, recovery profile, and patient satisfaction. Routine psychological screening using validated tools such as HADS should be incorporated into preoperative assessment protocols to improve perioperative care and optimize surgical outcomes.

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