RESEARCH ARTICLE

Level of preoperative anxiety among elective surgical patients at Mardan Medical Complex (MMC) Mardan

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Abstract

Aim: Anxiety prior to surgery is typical among individuals undergoing elective surgeries. It induces fear, distress, uneasiness, and physical signs such as increased heart rate. Factors contributing to anxiety include poor communication and inadequate support. There are two types of anxiety: state anxiety and trait anxiety. To determine the prevalence of preoperative anxiety among elective surgery patients at Mardan Medical Complex (MMC), Mardan. **Methods:** A cross-sectional and descriptive study was conducted on 214 patients undergoing elective surgeries at Mardan Medical Complex (MMC), Mardan, during the period from December 2025 to April 2026. The demographic data along with the preoperative anxiety score of each patient was recorded through a questionnaire based on Hamilton Anxiety Rating Scale (HAM-A). **Results:** The majority of patients' age ranged from 18 to 29 years (30%), while males constituted 63.8%. Herniorrhaphy, breast biopsy, and cholecystectomy were the most common surgeries. **Conclusion:** The prevalence of preoperative anxiety was quite high in the case of elective surgical patients in MMC Mardan. The most common form of anxiety was severe anxiety, which was mostly attributed to the fear of anaesthesia and pain.

Keywords: Anxiety , Surgical, Mardan

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Introduction:

Anxiety before to surgery is known as preoperative anxiety. This process, which is frequently used in preoperative patient evaluation, begins on the day before operation planning and progressively gets more intense until it is carried out. For those who suffer from it, it may often be characterized as a stressful condition. Stress and discomfort are signs of preoperative anxiety. This reaction is known to include the sympathetic, parasympathetic, and endocrine nervous systems. 1 Studies show that hospitalized patients suffer from anxiety and despair as a result of not receiving surgical advice or support from medical personnel, which hinders the development of a suitable therapeutic relationship [1].

Preoperative anxiety (POA) is the psychological, physiological, and behavioral condition of an uncomfortable or tense, unpleasant mood before to surgery that may cause altered haemodynamics. The anxiety, which begins when the operation is scheduled and peaks when the patient is admitted to the hospital, is brought on by the fight-or-flight sympathetic activation. [2]

Numerous characteristics, such as gender, age, education level, kind of operation, type of anaesthetic, previous hospital stays, etc., were shown to be connected with preoperative anxiety. On some of these components, though, the results are not always constant [3]

Anxiety can manifest in a variety of ways, including tension, unease, concern, dread, and increased autonomic activity. Pain, bleeding, and the possibility of morbidity or even death are common side effects of the stressful process of surgery. People who are scheduled for surgery may choose not to undergo the procedures due to an uncomfortable emotional condition called anxiety [4].

The two primary types of anxiety symptoms are psychological and physical. Physical symptoms include palpitations, tremors, lightheadedness, nausea, exhaustion, and insomnia. Psychological symptoms include tension, worry, fear, impatience, agitation, restlessness, and difficulty focusing [5].

Two forms of anxiety have an impact on the length of hospital stays and patient reports of physical complaints. Two examples are trait anxiety and state anxiety. While state anxiety is recognized as a transient, fluctuating condition that rises in surgical patients, trait anxiety is thought to be a rather

consistent personality trait. Transitory or state anxiety is typically low in situations where there is little to no threat, but it is significant in horrific situations. However, trait anxiety is not much impacted by situational stress. According to these predictions from trait-state anxiety theory, a number of research revealed that state anxiety is higher before

surgery and decreases after surgery and during the post-operative recovery phase [5]

Preoperative anxiety is one of the hardest disorders to manage before to surgery. A common low level of dread is an expected reaction to unexpected and potentially dangerous events, especially for a patient's first surgical encounter. However, higher and longer preoperative anxiety levels delayed wound healing and necessitated higher anaesthetic dosages and recovery. Most patients feel anxious before surgery, and this is usually seen as a normal patient response [6].

One of the several postoperative effects that preoperative anxiety has on the patient is pain. Pain, which is mostly brought on by preoperative worry, is the most frequent postoperative complaint among patients. Pre-operative anxiety has been associated with a number of issues, such as nausea, vomiting, cardiovascular irregularities including tachycardia and hypertension, and an increased risk of infection [6]

The primary causes of elevated preoperative anxiety include fear of pain, damage, complications, and death. There are also worries about deteriorating physical capabilities and caring for family members and children. Surgery is a psychological stressor that requires therapy, according to psychological theories. Psychological stress increases vulnerability to illnesses and surgical problems by suppressing the immune system and activating the central nervous system [7].

For example, patients who have significant levels of anxiety prior to surgery usually require greater dosages of analgesics and induction medications and require longer hospital stays. [8].

Preoperative anxiety may cause a variety of problems, such as autonomic fluctuations, delayed jaw relaxation and coughing during anaesthesia induction, insufficient venous access due to peripheral vasoconstriction, and increased anaesthetic demand. Additionally, it has been associated with prolonged recovery times, increased risk of infection, and increased postoperative discomfort, nausea, and vomiting..[9].

Numerous responses might be triggered by anxiety. Physiological effects include tachycardia, hypertension, raised body temperature, sweating, nausea, and an improved sense of touch,

smell, or hearing. Psychological responses include behavioral changes such as increased tension, worry, uneasiness, and hostility [9]

White coat hypertension, which is usually linked to anxiety, happens in medical settings. It's not a harmless thing. Similarly, undetected or uncontrolled hypertension can lead to glucose intolerance, organ damage, cardiac morbidities, and even death. It is also one of the possible causes of needless surgery cancellations. [10].

Autonomic reaction and increased anxiety may result in tachycardia, hypertension, and arrhythmias in addition to increasing the risk of intraoperative hypothermia. Preoperative patient anxiety in the childcare sector is especially crucial since sedative premedication is often disregarded. Other elements that may cause tension and worry in patients include the demands of the one-day treatment, the waiting period in the ward before to the procedure, contacts with hospital staff (nurses, anaesthetists), arranging an accompanying person, and financial resources. Additionally, throughout the recovery phase, patients may worry about anaesthesia, surgery, and unfavourable outcomes..[11]

Measuring anxiety is essential for patients having any type of surgery because worried people respond differently to anaesthesia than do non-anxious patients. It has been discovered that obstetric patients have higher levels of preoperative anxiety than the general surgical population.[12]

Anxiety may be measured using a variety of methods. Although more direct measurements of sympathetic-adrenal activity have been made using plasma cortisol and urine catecholamines, objective estimates also involve indirect measurements of this activity using skin conductance, blood pressure, and heart rate [13]

Anxiety is measured using a range of instruments. Although more direct indicators of sympathetic adrenal activity include plasma cortisol and urine catecholamines, objective approaches also include indirect measurements of this activity using blood pressure and heart rate. Anxiety may be measured using subjective tools like the Hamilton Anxiety Rating Scale (HAM-A) [12], The mistake of subjective preoperative anxiety evaluation is demonstrated by the overestimation of patients' fear by both surgeons and anaesthetists. Numerous techniques may be used to objectively measure preoperative anxiety. We utilised the Hamilton Anxiety Rating Scale (HAM-A) since it is a reliable tool for identifying preoperative anxiety and is quick, straightforward to explain to patients, and uncomplicated. [14]

Measuring state anxiety throughout the preoperative phase is advised. The alternative scale for the Hamilton Anxiety Rating Scale (HAM-A) is a 100 mm (10 cm) line. This line displays little anxiety at one end and the highest possible distress at the other. Anaesthetists are familiar with this technology since it is also used to measure pain [13]

Rationale

This study addresses a clinically relevant, modifiable factor that can improve patient comfort and preoperative outcomes. Preoperative anxiety among elective surgical patients will help quantify the magnitude of the problem,

identify high-risk groups, and guide the development of simple, cost-effective interventions like patient counseling, preoperative education, and anxiolytic strategies. Early detection makes it possible to implement customized interventions that will lessen anxiety, accelerate healing, and enhance the overall patient experience. Effective anxiety management enables medical professionals to perform surgeries safely and effectively.

Significance

The significance of this study is to;

• Reduced Postoperative Complications: High levels of preoperative anxiety can lead to increased postoperative pain, longer recovery times, and a higher likelihood of complications. Addressing anxiety can improve these outcomes.

• Enhanced Pain Management: Anxious patients may require higher doses of pain medication, which can increase the risk of side effects. Evaluating anxiety helps tailor pain management strategies.

• Faster Recovery: Lower anxiety levels can contribute to quicker recovery times and earlier discharge from the hospital.

Literature review

Significant pre-operative worry disrupts the patient's physiological state during surgery, according to Williams et al. (1972), and anxious individuals need greater doses of pentothal to induce anaesthesia. They contend that these people may face more risks since higher dosages are linked to anaesthesia-related mortality.[15]

In a relatively recent observational study with almost 16,000 patients, anxiety was most commonly reported as the worst aspect of the surgical experience. Additionally, research has demonstrated a connection between anxiety and increased rates of postoperative morbidity and mortality.[16] Anxiety related to anaesthesia and the procedure itself as an examples of preoperative anxiety. There hasn't been much research done on whether people are more anxious about anaesthesia or surgery. While two studies found that more patients had anxiety due to anaesthesia, another study revealed higher overall feelings of fear associated to operation.[16]

Studies show that POA still affects 50% of surgical patients globally, with the largest incidence occurring in low- and middle-income nations .[2] Furthermore, studies showed that a considerable proportion of surgical patients—between 60 and 80 per cent, according to reports—experience severe preoperative anxiety [6]

Preoperative anxiety is generally prevalent in the Western population between 60 and 80%, according to certain studies; however, other researchers observed a wider range of 11 to 80%. Preoperative anxiety varies throughout patient populations. For instance, it is known that female, young, and well-educated patient groups are more likely to experience preoperative anxiety [10]. Preoperative anxiety is more frequent among nursery patients than in-patients undergoing fast-track surgery, despite the fact that many patients perceive nursery surgery to be an attractive choice[11]

Preoperative anxiety affects 11% to 80% of adult patients, depending on the surgical group. Higher dosages of induction medications and postoperative analgesics are necessary for anxious patients.[12]

Preoperative anxiety affects 60–80% of Westerners, according to published studies. The prevalence of anxiousness among Pakistani surgical patients is unclear. Cultural differences may have an influence on this statistic [13]

According to the NANDA-I, the formation of anxiety is linked to major changes in one's environment, health, role, economic status, situational crises, pressures, threat of death, and unfulfilled demands. According to the authors, postoperative patients also frequently experience anxiety. Both the actual treatment and hospitalisation -related environmental changes, including the presence of unpleasant other patients or diagnostic procedures, may make anxiety worse. Surgery, anaesthesia, relinquishing control, and death are the main concerns during the preoperative stage. Pain, loss of physical functions, changes in body image, and a return to daily activities and work life are all part of the postoperative phase [17] People undergoing surgery often suffer anxiety, which is the most common response to stress. Preoperative anxiety is a predictor of length of hospital stay, analgesic use, postoperative procedure satisfaction, and recovery perceptions in women undergoing surgery. Research indicates that surgical recovery was more challenging, time-consuming, and uncomfortable for adult patients with significant levels of preoperative anxiety [18]. Anxiety can manifest physically as heart palpitations, tachycardia, muscle weakness, fatigue, nausea, chest pain, shortness of breath, migraines, stomachaches, or tension headaches. According to a study conducted in Pakistan, 62% of patients had preoperative anxiety [19]

Preoperative anxiety prevalence varies among surgical patients based on the kind of surgery, past surgical experience, and coping mechanisms. Preoperative anxiety affects between 60% and 80% of Western surgical patients, according to research Matthias and Samarasekera [8] In particular, surgery and general anaesthesia continue to be two of the most traumatic events in a patient's life. These procedures are characterised by three distinct negative aspects: the fear of the unknown, the idea of being ill, and the possibility of dying.[20]

Between 60% and 92% of people have acute preoperative anxiety, according to published data [11] A certain level of anxiety is a typical reaction to the unpredictable and potentially risky conditions that are prevalent during the

preoperative phase, especially for the patient's first few surgical encounters. However, excessive preoperative anxiety may cause pathophysiological effects. These include tachycardia, hypertension, arrhythmias, and increased discomfort that may last into the postoperative period [21]

Nearly 40 million individuals have surgery in China each year, yet little is known about the prevalence of preoperative anxiety. Preoperative anxiety was reported in 11–89% of patients in a few small-scale studies including hundreds of patients. However, these investigations

were mostly single-center studies that only covered specific types of procedures and employed a range of anxiety measurement tools. Because there is so much diversity between research, the findings cannot be extended to other patient populations [22] Since cancer is a psychosomatic illness, a patient's psychological state plays a major role in both diagnosis and treatment. Anxiety and sadness are reportedly the two most common psychological problems among cancer patients. Clinical research indicates that comorbid depression and anxiety are important because they result in more severe symptoms, impairment, subjective suffering, and a longer duration than either disorder alone [23] Anaesthetists, surgeons, and nurses with surgical training are advised to see their work as a technical task and engagement as well as a psychological, ethical, and cognitive obligation when confronted with surgical anxiety[24]

Anxiety disorder is considered a common mental condition, according to Pan et al. (2019). According to the China Mental Health Survey, 7.6% of Chinese patients suffer from anxiety disorders (Huang et al., 2019). Worry is unavoidable since surgery is a potent stressor. Previous studies have shown that patients having elective surgery frequently experience preoperative anxiety, with anxiety being more prevalent in female patients (Gan et al., 2014; Mimic et al., 2018) [25]

51% of patients reported pre-operative anxiety and 15.7% had post-operative anxiety, according to a review of pre-operative and postoperative anxiety among elective major surgery patients in a Nigerian tertiary hospital. Anxiety was more prevalent in female patients than in male patients, according to a study on pre-operative anxiety in surgical patients' experiences in a single unit at the National Hospital of Sri Lanka [8]

According to research done in Canada, Saudi Arabia, and Sri Lanka, preoperative anxiety was shown to be 89%, 55%, and 76.7% common overall. A study conducted in Austria found that preoperative anxiety affected 45.3% of surgery patients who were hospitalised. Additionally, the results of a study carried out at a large Nigerian hospital and a pilot study carried out in Niger showed that 51.0% and 90% of surgical patients, respectively, had significant preoperative anxiety.[6]

An Ethiopian study found that the most common preoperative worry, accounting for 70.37 percent of patients, was fear of dying. A research conducted in Pakistan found that the average anxiety score was 57.65%. Giving anaesthetic information and intraoperative dread are the two areas where most patients are concerned. Studies have shown that anxiety causes a range of physiological responses. Anxiety evaluation can be performed before to surgery,

according to a Turkish study. According to a review done in Nepal, preoperative anxiety is reduced by preoperative counselling and relevant surgical information [27]

Objectives

• To assess the level of preoperative anxiety in patients undergoing elective surgery at the public sector (MMC) hospital in Mardan .

Operational definitions

Preoperative anxiety

Preoperative anxiety is an unpleasant state of tension, panic, or stress that patients experience before undergoing a medical operation.

Elective surgery

Elective surgery is a planned, non-emergency surgery that is medically necessary, but can be delayed for at least 24 hours.

Hamilton anxiety scale

The Hamilton anxiety rating scale is 0-4 item tolls will be used to measure the severity of anxiety symptoms.

Materials & methods

Study setting

The surgical departments of the Mardan Medical Complex (MMC), Mardan, were the site of this descriptive cross-sectional study. The largest medical institution in KPK's northern zone, Mardan Medical Complex is a 700-bed tertiary care teaching hospital that emphasises practicing medicine with compassion and dignity in accordance with international high standards and medical ethics.

Study design

A descriptive cross-sectional study was carried out in an institutional environment to assess preoperative anxiety in surgery patients.

Study duration

It took four months to complete this study. For this study, 214 surgical patients were selected between December 2025 and April 2026.

Sample size

An Open-EPI calculator is used to determine the sample size. With a 95% confidence level, a 5% margin of error, and a non-response rate of 10%, the study will use the prevalence of unexplained preoperative anxiety among elective surgery

patients (82.9%). (p=82.9%, Z=1.96, d=0.05, 10% non-response rate).

Population =10000. Final sample size =214.

Sample selection

Inclusion criteria

• All male and female surgical patients

• Age above 18 year old and schedule for elective surgery.

• Be a known surgical patient as determined by the surgeon, and provide a documented medical record.

Exclusion criteria

• Those who are not willing to participate in the study.

• Those who have altered mind status.

• The patient with a neurological problem (mentally retorted).

Ethical approval, informed consent, and patient privacy

The study proposal was submitted to the hospital and GSC comity's undergraduate research committees. Following ethical approval, participants are told about the purpose and nature of the study, and their formal informed permission is acquired. The Mardan Medical Complex (MMC) has approved the data collecting. The information on the respondent's identity was only available to the main investigator. The identities of the patients were never disclosed in the article or throughout the data analysis.

Data collection

The instrument used to gather data is a questionnaire that was created based on a thorough assessment of similar research in the literature. The participants were selected by a non-probability convenience sampling technique. An interview-based questionnaire was introduced to every member by the researcher in a homogenous way to avoid interview bias. The questionnaire contains demographic information, clinical information, and an anxiety assessment tool.

Data analysis

The instrument used to gather data is a questionnaire that was created based on a thorough assessment of similar research in the literature. The participants were selected by a non-probability convenience sampling technique. An interview-based questionnaire was introduced to every member by the researcher in a homogenous way to avoid interview bias. The questionnaire contains demographic information, clinical information, and an anxiety assessment tool.

The data entry and analysis were done using Statistical Package for Social Sciences (SPSS). The tool employed for collecting data was a survey questionnaire that was created following a comprehensive analysis of related studies in literature. Frequencies and percentages were applied for analyzing categorical data. The scoring for the level of anxiety included not present, mild, moderate, severe, and very severe.

Results

A total of 214 subjects participated in the research. The most representative age group was that between 18 and 29 years old, with a total of 65 subjects (30%). Afterward, the age groups were the following: between 40 and 49 years old, with 61 subjects (28.8%); 50 years

or more, with 44 subjects (21.2%); and between 30 and 39 years old, with 42 subjects (20%).

Table 1. Age of the patient.

AGE GROUP	NUMBER OF PATIENTS	PERCENTAGE (%)
18-29	65	30.4%
30-39	44	20.6%
40-49	61	28.5%
50 or greater	44	21.2%
Total	214	100%

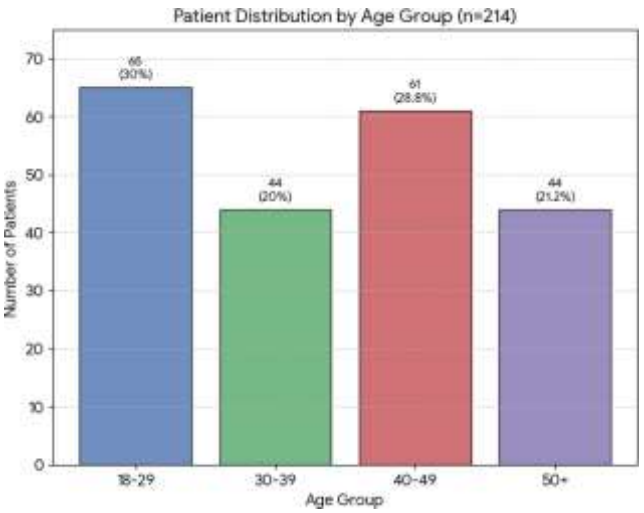


Figure 1. Age of the patient.

In the above table and figure shows, distribution of patients according to their age for elective surgery is depicted.A total of 214 patients have participated in this study, where 65 patients belong to age 18–29 years which constitutes 30.4% of all the participants, while second highest percentage of 61 patients belongs to age 40-49 years, which constitute 28.5%. The third highest percentage of 20.6% belongs to patients of age 30-39 years, while 21.2% patients belong to age 50 years or above.

Table 2. Gender distribution of patients.

GENDER	FREQUENCY	PERCENTAGE (%)
Male	116	54.2%
Female	98	45.8%
Total	214	100.0%

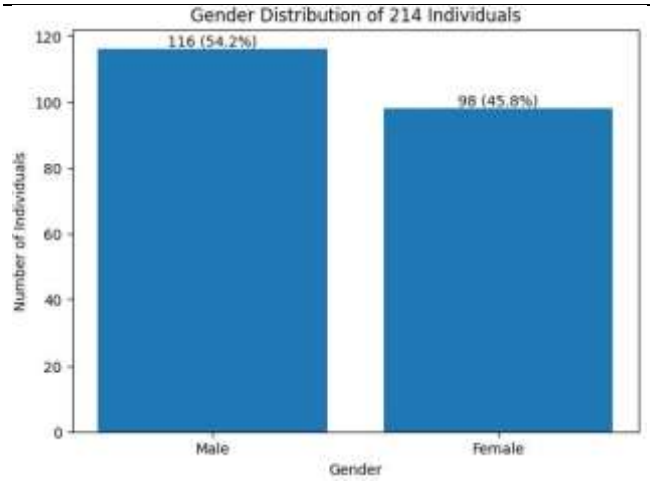


Figure 2. Gender distribution of patients.

In the above table and figure shows Male and female distribution of gender from a total of 214 subjects is equal (116 or 54.2% male, 98 or 45.8% female), with 116 (54.2%) males and 98 (45.8%) females represented in this sample (see Table 1). The study included between one-half to three-quarters more subjects who were males than who were females.

To clearly illustrate the relative size of male vs female patients in the sample, a bar or pie graph would effectively illustrate the total percent of individuals classified as female compared to the percent of males within the total sample of individuals. This type of visual representation will provide a clear visual depiction of the total percent of males within the total sample of females.

Table 3. Frequency and percentage of different types of surgeries performed.

Surgical Procedure	Frequency	Percentage
Cholecystectomy	53	24.7%
Breast Biopsies	52	24.2%
Hernia Repair	32	15.0%
Colo Rectal Procedure	29	13.6%
Laparotomy Procedure	27	12.6%
Hemorrhoidectomy	21	9.8%
Total	214	99.9%

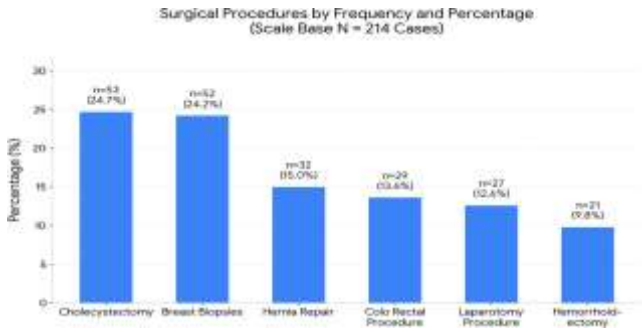


Figure 3. Frequency and percentage of different types of surgeries performed.

In the above table and figure shows The variance in types of operations to all 214 patients indicated that the most common procedure was a Cholecystectomy which occurred 53 times (24.7%); followed closely by Breast Biopsy's which occurred 52 times (24.2%). There were 32 Hernia Repairs (15.0%), while Colo Rectal Procedures took place 29 times (13.6%).

Within the remaining patients, 27 had a Laparotomy (12.6%) and 21 had a Haemorrhoidectomy (9.8%), indicating that the most common elective surgeries performed to the participants in this study were Cholecystectomy and Breast Biopsy's

Table 4. Frequency and percentage of different anchors.

Anchors	Frequency	Percent
Not Present	9	4.2%
Mild	180	84.1%
Moderate	20	9.3%
Severe	4	1.9%
Very Severe	1	0.5%
Total	214	100%

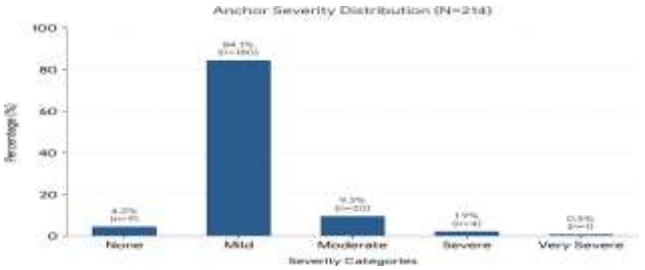


Figure 4. Frequency and percentage of different anchors.

Table 4 and Figure 4 shows that Among the total of 214 participants, the majority had mild anchors, accounting for 180 (84.1%) cases. Moderate anchors were observed in 20 (9.3%) participants, while severe anchors were present in 4 (1.9%) cases. Very severe anchors were reported in only 1 (0.5%) participant. A small proportion of participants, 9 (4.2%), had no anchors present. These findings indicate that mild anchors were the most common category among the study population, whereas very severe anchors were the least frequent

Table 5. Do you feel a fast heartbeat chest pain when thinking about surgery.

Heartbeat Chest pain	Frequency	Percent
Mild	25	11.7%
Moderate	16	7.9%
Severe	4	1.9%
Not present	166	78.0%
Total	214	100%

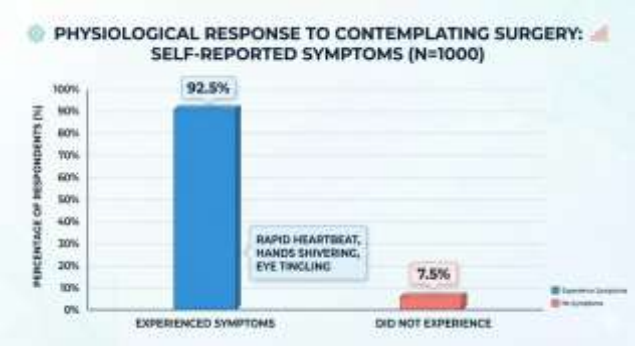


Figure 5. Do you feel a fast heartbeat chest pain when thinking about surgery.

Above Table and Figure shows A significant majority (92.5%) of the respondents reported experiencing a rapid heartbeat, hands shivering and eye tingling. when contemplating surgery. A smaller proportion (7.5%) did not. This data suggests that a rapid heartbeat is a frequent physiological response to the thought of surgery for many people

Table 6. Do you fell shortness of breath and tied chest.

Shortness of breath Tied Chest	Frequency	Percent
Mild	22	10.7%
Moderate	25	11.7%
Severe	8	4.2%
Not present	157	73.4%
Total	214	100%

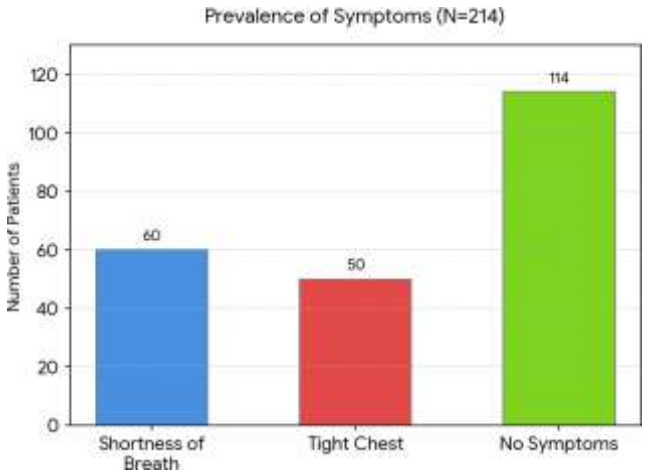


Figure 6. Do you fell shortness of breath and tied chest.

Above table and graph shows people who had Most surgery did not trouble breathing or't have feebleness in their chest beforehand tight. Out the patients, of all 157 which is about, 73%, any of these didn't have people, symptoms. Some 25 of is around 11%, them, which had moderate breathing and felt some trouble tightness in their chest., 22 patients, which is about 11 A few more%, had mild symptoms. Only a small, 8 patients, which is about 4%, had number really tells us that most people who had bad symptoms. This elective breathing problems, but surgery didn't have any big did have some some trouble breathing and chest which might be because they were anxious tightness, before the surgery.

Discussion

This study assessed the level of anxiety experienced by patients prior to undergoing elective surgery. It revealed that most patients exhibited mild anxiety, while a few suffered from moderate to high anxiety levels. Previous international and national studies have also reported comparable results, indicating that numerous patients facing surgery encounter pre-operative anxiety.

The current research identified a significant level of pre-operative anxiety among participants ahead of their surgery, aligning with the results from Jiwanmall et al. (2020) [11], which showed notably high pre-operative anxiety in patients undergoing same-day surgical procedures. Patients mainly expressed worries regarding the anesthesia, anticipated pain following the procedure, and potential outcomes of their surgery [11]. Furthermore, Matthias and Samarasekera (2012) [8] discovered that a considerable number of surgical patients experienced anxiety prior to their operations due to fears concerning unpredictable results and possible complications following surgery [8]..

In their 2009 study conducted in Pakistan, Jafar and Khan found that patients exhibited very high levels of anxiety prior to surgery. Their research indicated that factors such as being female, insufficient preparation before surgery, and fear of the surgical process significantly contributed to anxiety [13]. Moreover, the findings of Jawaid et al. (2007) [14] support the notion that adequate preparation and counseling can help alleviate pre-operative anxiety. They discovered that the absence of proper preparation and counseling led to heightened levels of anxiety in patients scheduled for elective surgery..

The present research indicated that anxious individuals reported a range of symptoms, including, but not limited to, chest tightness, trouble breathing, disrupted sleep, and feelings commonly related to nervousness. Johnston (1980) [15] pointed out that surgical patients who displayed elevated anxiety levels before surgery were more inclined to show both psychological and physiological symptoms, such as an increased heart rate, chest discomfort, excessive sweating, and challenges with sleep [15]. Furthermore, Aust et al. (2018) [16] stated that preoperative anxiety correlates with the occurrence of physical symptoms, which can impede a patient's recovery after surgery and amplify postoperative pain [16].

The current results are also in line with those of Bedaso and Ayalew (2019) [4], who discovered that preoperative anxiety was present in many adult patients undergoing elective surgery in Ethiopia. Their research revealed that preoperative anxiety was associated with three main factors: fear of death, fear of postoperative pain, and a history of having undergone surgery with unsatisfactory results [4].

Similarly, Mulugeta et al. (2017) [6] found that high levels of preoperative anxiety were considerably more common in patients who had never undergone surgery before and/or who had not received sufficient information before to surgery [6].

According to Bagheri et al. (2019) [1], patients undergoing elective hernia procedures experienced less anxiety when operating room personnel visited them before the procedure. This demonstrates the need of providing patients with sufficient emotional support and

preoperative communication to help lower their anxiety levels before surgery [1]. According to Bansal and Joon (2016) [9], preoperative anxiety is still a major problem that is frequently disregarded. They suggested that sufficient psychological preparation and counselling be regarded as crucial nursing interventions to help patients reduce their preoperative anxieties [9].

The most recent study conducted by Kefelegn et al. (2023) [2] found that a number of factors, including fear of complications, inadequate social support, and poor surgical expertise, are associated with preoperative anxiety experienced by adult surgical patients in Ethiopia [2]. Anxiety was found to be extremely significantly predicted by gender (female), age (younger), and lack of prior surgical exposure in a similar study by Mellouli et al. (2018) [3]. As a result, there is a relationship between the results of this study and those of previous research that suggest emotional and demographic traits have a role in the preoperative anxiety that patients feel before elective surgery.

Yu et al.'s study (2022), conducted in China across several hospitals, demonstrated the high incidence of preoperative anxiety among adult surgical patients and the higher likelihood of it occurring among females as well as patients having major surgeries [22]. Furthermore, Xu et al. (2016) [23] reported high levels of anxiety and sadness among patients with stomach cancer, suggesting that the severity of a diagnosis will raise emotional distress before surgery [23]. According to Prajapati et al. (2022) in Nepal, patients undergoing major surgery had moderate to severe anxiety levels before the procedure, and the authors advise routinely assessing preoperative anxiety [26].

The main finding of this study is that patients undergoing elective procedures usually have minor preoperative anxiety. Therefore, in order to help lower preoperative anxiety levels and subsequently improve surgical outcomes, healthcare professionals should identify patients with anxiety as early as possible and provide them with effective communication, preoperative counselling, and sufficient emotional support. The findings of this study are in line with previous studies and demonstrate the crucial role that nurses and other members of the surgical team play in helping patients deal with and control their preoperative anxiety before elective surgery.

Conclusion

The study of 214 patients revealed that the largest age group was 15–29 years (30%), with a male predominance (54.2%). Cholecystectomy, breast biopsies, and hernia repair were the most common surgeries (16.2% each). Preoperative anxiety affected 96.2% of participants, with rapid heartbeat reported by 92.5%. Coping strategies included prayer (46.2%), medication (27.5%), and breathing exercises (13.8%). Common fears included anesthesia (46.2%) and pain (37.5%). Severe anxiety was most prevalent (0.5%), particularly at MMC of anxiety levels. These findings highlight the need for tailored interventions to address preoperative anxiety

Recommendation

To address preoperative anxiety in surgical patients, healthcare providers should implement structured preoperative counseling to alleviate fears and uncertainties. Training programs for medical staff should focus on recognizing and managing anxiety through empathetic communication and support. Incorporating evidence-based techniques like relaxation exercises and mindfulness can help patients cope effectively. Ensuring timely and comprehensive information about surgical procedures is crucial to reduce patient apprehension. Tailored interventions for high-risk groups, such as those with prior surgical trauma, can enhance outcomes. Engaging family members as part of the support system provides additional emotional reassurance. Comparative studies between public and private healthcare facilities can identify best practices for standardized anxiety management. Postoperative follow-up on anxiety should be integrated to address long-term psychological impacts. Feedback mechanisms should be employed to refine care practices continuously. Finally, leveraging digital tools can offer accessible resources for anxiety reduction and preoperative education.

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Consent of participants

Title of the Study:

Level Of Preoperative Anxiety Among Elective Surgical Patients At Mardan Medical Complex (MMC) Mardan.

You are invited to participate in a research study conducted by KMU IHS Mardan.

The purpose of this research is to investigate Level Of Preoperative Anxiety Among Elective Surgical Patients At MMC Mardan.

Risks and discomforts

There are no known risks associated with this research.

Potential benefits

There are no direct benefits to you from participating in this research.

Confidentiality

Your privacy will be strictly protected. No personal information will be disclosed in any reports or publications. All data collected will be stored securely and used only for academic and research purposes.

Voluntary participation

Your participation is entirely voluntary. You may withdraw at any time without any penalty or loss of benefits.

I have read and understood the information above. I had the opportunity to ask questions. I voluntarily agree to participate in this study.

Participant's Name

Signature

Date

(This is not compulsory, but if you want to provide your phone number and email voluntarily, I will be pleased because I have to defend my research in front of my university research Committee. The research committee may ask me to provide us the email or phone number of the person from which you have taken this data. If you want to provide this information voluntarily so I will be grateful to you otherwise, there is no pressure on you from my side, you can leave this section blank).

Questionnaire

Hamilton Anxiety Rating Scale (HAM-A)

0 = Not present, 1 = Mild, 2 = Moderate, 3 = Severe, 4 = Very severe.

Section	Question	Options				
Demographic Information	1. Age?	[ ] 18-29 [ ] 30-39 [ ] 40-49 [ ] ≥ 50				
	2. Gender?	[ ] Male [ ] Female				
	3. What type of surgery you are undergoing now?	[ ] Cholecystectomy [ ] Appendectomy [ ] Hemorrhoidectomy [ ] Hernia				
Hamilton Anxiety Rating Scale (HAM-A)	1. Feeling worried or expecting something bad	0	1	2	3	4
	2. Feeling tense, restless, cannot relax.	0	1	2	3	4
	3. Feeling afraid (dark, strangers, crowds, etc.	0	1	2	3	4
		0	1	2	3	4
	4. Sleep problems or bad dreams.	0	1	2	3	4
	5. Trouble concentrating or remembering	0	1	2	3	4
	6. Feeling sad or not enjoying things.	0	1	2	3	4
	7. Muscle pain, stiffness, shaking.	0	1	2	3	4
	8. Sensory problems (blurred vision, tingling, weakness).	0	1	2	3	4
Section	**Question**	**Options**				
	Heart symptoms (fast heartbeat, chest pain). Breathing problems (tight chest, short breath). Stomach problems (nausea, gas, pain, constipation). Urination or sexual problems.	0	1	2	3	4

Body stress signs (dry mouth, sweating, dizziness)	0	1	2	3	4
Nervous behavior (fidgeting, pacing, shaky hands).	0	1	2	3	4
	0	1	2	3	4
	0	1	2	3	4
	0	1	2	3	4

Scoring

• Total score range of 0–56, where <17 indicates mild severity, 18–24 mild to moderate severity and 25–30 moderate to severe.

• Administration time 10–15 minutes.