

FREQUENCY OF PREOPERATIVE ANXIETY IN SURGICAL PATIENTS AT TERTIARY CARE HOSPITALS DISTRICT, MARDAN KPK PAKISTAN

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Abstract

Background: Preoperative anxiety is a frequent emotional response before surgery, influenced by factors such as age, gender, prior surgical experience, and the type and extent of the procedure. It can adversely affect anesthetic and surgical outcomes.

Methods: The study design used for this research is a descriptive cross-sectional study included 384 adult surgical patients. STAI questionnaire a study tool. STAI scores of 20 to 37 have No or Low Anxiety, 38 to 44 have Moderate Anxiety and 40 to 80 have high Anxiety. The Statistical Package for the Social Sciences (SPSS) version 29.0 was used to enter and analyze all of the data that was gathered. Quantitative factors like age were subjected to descriptive statistics, such as mean and standard deviation

Results: Out of 384 Participants including 173 (45.1%) were Male, 211 (54.9%) were female with valid percent of (45.1%) and (54.9%) respectively. Age of participants was ranged between 18 to 65 years with a mean 34.22 and SD deviation is 13.735. Percentages of Patients' anxiety levels were calculated where 12% has no or low anxiety, 48.7% have moderate anxiety and 39.3% have very high anxiety.

Conclusion:

The anxiety level of patients varies from mild to moderate and high. Different factors like gender, level of education of the participants and type of surgery affect the level of anxiety. Female gender, younger age and higher educational status were positively correlated.

INTRODUCTION

"Anxiety is an emotion characterized by feelings of tension, worried thoughts, and physical changes like increased blood pressure" (American Psychological Association). A state of concern, dread, or uneasiness is referred to as anxiety. An uncomfortable feeling of tension or unease brought on by a patient's uncertainties or concerns before to surgery. (1) Age, gender, kind, and extent of the procedure all have an impact on the patient's preoperative anxiety. (2) Some

studies suggested that the causes of increased morbidity in anxious patients include cardiovascular lesions that occur from health-related behaviors, direct effects on myocardial perfusion, control of the autonomic nervous system, activation of platelets, increased activity of the hypothalamic-pituitary-adrenal axis, and heightened inflammatory processes are related to pre operative anxiety. (3) The brain's amygdala prefrontal circuit, which is responsible for

emotional responses, is thought to be the source of anxiety. The prefrontal cortex of the brain is thought to have poor control and the amygdala to have an overactive response when anxiety symptoms arise. The brain of worried people is believed to become biased over time, and when the circuitry is activated, anxiety symptoms respond in the same way.(4) Preoperative anxiety is a common condition that can affect as many as 97% of surgical patients, depending on the type of procedure, the patient's gender, the reason for the procedure, and the nation.(5) pre-operative anxiety among different spectrum of surgical patients from 27% to 80%, according to studies carried out in the European region, with Spain recording the greatest frequency and Holland the lowest.(6) Preoperative anxiety was found to be prevalent in Pakistan between 62 % and 97 %, according to studies conducted there. Preoperative anxiety was also shown to be prevalent in India between 47 % and 70.3%. The frequency of pre-operative anxiety is found to be so high (20.2%) in the US, compared to 24% of Brazilian populations according to studies. Preoperative anxiety was also shown is frequency in India between 47 % and 70.3%.(7)The causes of surgical anxiety vary greatly depending on the specifics of each patient and can range from having an intense dread of the unknown to having a bad experience with previous Surgeries (8) The DSM-5 added the single or divorced marital status, a weak social support network, younger age, and race in addition to related risk factors.(9) Irrational anxieties about particular things or circumstances are referred to as specific phobias.(10) The less common (non-medical) approach uses methods from physiotherapy, psychology, and other fields. The more popular one is the pharmaceutical strategy, which involves the injection of medicines to anesthetize or sedate patients. (11) STAI was considered to be a gold standard for evaluating pre-operative anxiety in a prospective randomized study of 200 patients receiving sub-arachnoid block.(12) . The State-Trait Anxiety Inventory Scale, which measures anxiety, allows the theory's relatively broad application to be more precisely defined.(13) Preoperative anxiety has associations with both independent and dependent risk variables. following independent risk variables are unrelated to anxiety: (a) a history of cancer, (a) smoking, (b) being a

woman, (c) psychiatric illnesses, (d) self-reporting mild to severe discomfort pain, (e) physiological state, (f) the availability of formal education. anxiety-related dependent risk factors include (a) a fear of the unknown, (b) being apart from loved ones, (c) a fear of pain or death, (d) a concern or independence, and (e) recovery time following surgery. (14) The frequency of preoperative anxiety might vary significantly among surgery patients, and should be evaluated on an individual basis. To ensure that patients are comfortable and well- cared for before surgery, healthcare professionals should be proactive in identifying and treating preoperative anxiety. Preoperative anxiety can be effectively managed using a variety of treatments, including education, breathing exercises, and pharmaceutical interventions.

This study aimed to determine the prevalence and severity of preoperative anxiety among patients undergoing various surgical procedures. It also sought to identify potential factors associated with preoperative anxiety, with the ultimate goal of enhancing perioperative care and improving patient outcomes.

Material and Methods

A descriptive cross-sectional study was used, which was carried out at the Mardan Medical Complex in Khyber Pakhtun khwa, Pakistan. 384 people made up the overall sample size, which was calculated using OpenEpi.com utilizing a 5% margin of error, a 95% confidence level, and an estimated prevalence of 48%. Participants who fulfilled the study's requirements were chosen using a practical sampling technique. Patients between the ages of 18 and 65 who were ASA Class I or II, conscious, and scheduled for elective procedures in the general surgery, orthopedics, gynecology, ENT, neurosurgery, and obstetrics departments met the inclusion criteria. Surgical procedures conducted under regional, neuraxial, or general anesthesia were eligible, and patients with or without a prior surgical history were included. Patients undergoing severe vascular or cardiovascular procedures, those who were unconscious, those who were experiencing a language barrier, and those who were currently using anxiolytic drugs were all excluded. In order to reduce potential confounders and bias in the study outcomes, these criteria were closely

adhered to. Ethical approval from the hospital's ethics committee and the Advanced Studies and Research Board (AS&RB) was acquired prior to data collection. The goal, methods, and possible advantages of the study were explained to all patients who met the criteria. A written informed consent form was freely signed by those who gave their assent prior to participation.

The State version of the State-Trait Anxiety Inventory (S-STAI), a validated tool for evaluating preoperative anxiety, was used to collect data. Ten of the 20 items on the S-STAI measure sentiments connected to anxiety, and the other 10 objects that convey serene or agreeable emotional feelings. There are four possible answers for each question, and participants were told to choose the one that most accurately reflected how they felt. The STAI-S subscale has a total score between 20 and 80; higher scores correspond to higher feelings of anxiety. Scores between 20 and 37 indicate no anxiety or low anxiety, scores between 38 and 44 indicate moderate anxiety, and scores between 45 and 80 indicate severe anxiety, according to predetermined cut-off values.

The Statistical Package for the Social Sciences (SPSS) version 29.0 was used to enter and analyze all of the data that was gathered. Quantitative factors like age were subjected to descriptive statistics, such as mean and standard deviation.

A variety of independent variables, such as gender, the type of operation, and the type of preoperative anxiety, were examined for statistical significance using the Chi-square test. A better grasp of the sample distribution and study results was also made possible by the creation of frequency tables and pie charts that displayed categorical data, including ASA categorization, resident status, gender, employment status, and kind of operation.

RESULTS

The results of the study are provided in a variety of narrative formats, some of which are also offered in tabular form, while others are shown via tables.

Our Current study consist of 384 participants including 173 (45.1%) male and 211 (54.9%)

female (*figure 1*). Age of participants was ranged between 18 to 65years with a mean 34.22 ± 13.68 and SD deviation is 13.68. (*Table 1*) As for as the education level of the participants is concern 134 (34.9%) were illiterate, 16 (4.2%) had primary level of education, 75 (19.5%) were Middle level, 59 (15.4%) were SSC level, 54 (14.1%) were HSSC level, 46 (12%) have master level of education. also, we find that female have high ratio of anxiety then male. Percentages of Patients' anxiety levels were calculated where 12% has no or low anxiety, 48.7% have moderate anxiety and 39.3% have very severe anxiety. (*Figure 2*) General surgery 35.7%, Orthopedic surgery 12%, urology 4.9%, Gynecological surgery 30.2%, ENT 14.1% and Neurosurgery 3.1%. 260 (67.7%) surgery perform under General anesthesia and 124 (32.2%) under regional anesthesia. In total of 384 participants, 137 were undergoes through general surgeries. In which 85 were male and 52 were female. In male there were 9 no or low, 43 were moderate and 33 were high level of anxiety. In female there were 6 no or low, 27 were moderate, and 19 were high level of anxiety. 46 were go through Orthopedic surgery, in which male participants were 31 and 15 were female. In male 7 were no or low, 16 were moderate, and 8 were high level of anxiety. In female 4 were no or low, moderate and 7 were with high level of anxiety.

Where 19 undergo through urology, where in male participants 3 were no or low, 9 with moderate and 3 were with high level of anxiety. In case of female there was 1 with moderate and 3 were with high level of anxiety. 116 patients were through Gynecological surgeries. 6 females had no or low, 60 had moderate and 50 with high level of anxiety. 54 patients were through ENT surgeries, in which 22 were male and 32 were female. In male 4 had no or low, 10 moderate and 8 had high level of anxiety. In female group 6 were no or low, 12 were moderate and 14 were high level of anxiety. 12 male patients were through neuro surgeries, in which 1 had no or low, 5 had moderate and 6 had high level of anxiety.

Table:1

Table.1

Mean age of Participant							
		Number of Participant	Valid Percent	Min age	Max age	Mean age	Std. Deviation
Total		384	100%	18	65	34.27	13.68
Genderr	Male	173	45.1%	18	65	36.25	15.10
	Female	211	54.9%	18	65	32.64	12.19

Education Level	Surgery Types	Anxiety Level			Total	P Value
		no or low	moderate	high		
Illiterate	General surgery	6	20	15	41	p=0.05
	Orthopedic surgery	6	6	4	16	
	Urology	0	5	4	9	
	Gynecological	2	27	24	53	
	ENT	2	6	2	10	
	Neuro surgery	0	2	3	5	
Total		16	66	52	134	
Primary	General surgery	0	4	5	9	P<0.05
	Orthopedic surgery	0	0	1	1	
	Gynecological	1	1	1	3	
	ENT	0	0	2	2	
	Neuro surgery	1	0	0	1	
Total		2	5	9	16	
Middle	General surgery	1	14	7	22	P=0.01
	Orthopedic surgery	1	7	5	13	
	Urology	1	3	0	4	
	Gynecological	2	11	5	18	
	ENT	4	5	7	16	
	Neuro surgery	0	1	1	2	
Total		9	41	25	75	
SSC	General surgery	2	13	14	29	P<0.01
	Orthopedic surgery	3	2	3	8	
	Gynecological	0	6	5	11	
	ENT	2	1	6	9	
	Neuro surgery	0	1	1	2	

Total		7	23	29	59	P<0.05
HSSC	General surgery	2	9	8	19	
	Orthopedic surgery	0	3	0	3	
	Urology	1	0	1	2	
	Gynecological	0	8	7	15	
	ENT	1	7	5	13	
	Neuro surgery	0	1	1	2	
Total		4	28	22	54	P<0.01
Master	General surgery	4	10	3	17	
	Orthopedic surgery	1	2	2	5	
	Urology	1	2	1	4	
	Gynecological	1	7	8	16	
	ENT	1	3	0	4	
Total		8	24	14	46	
Total	General surgery	15	70	52	137	
	Orthopedic surgery	11	20	15	46	
	Urology	3	10	6	19	
	Gynecological	6	60	50	116	
	ENT	10	22	22	54	
	Neuro surgery	1	5	6	12	
Total		46	187	151	384	

Figure 2:

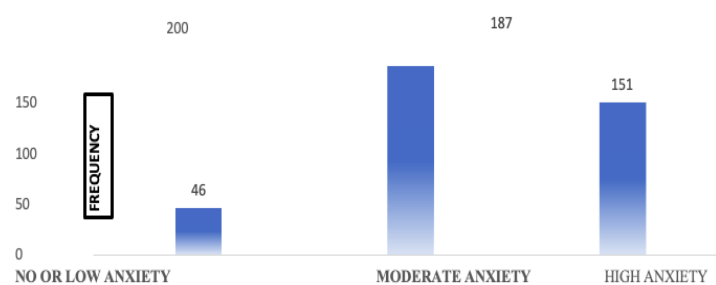


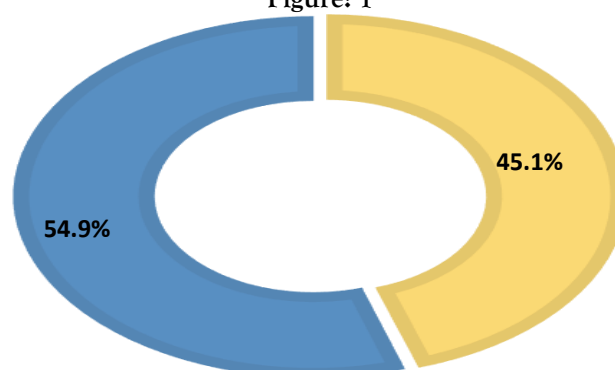
Figure2: No or Low, Moderate and High Anxiety

Percentages of Patients' anxiety levels were calculated, where 12.0 % has no anxiety, 48.7% moderate anxiety, and 39.3% have severe anxiety. Chi square was used to determine whether there was any Association between several categorical variables and the anxiety level, which is also a categorical variable. Preoperative anxiety was reported to be prevalent in 211 (56%) of female patients compared to 171 (44%) of male patients ($p<0.001$). This suggests that

women are more anxious than men. It was discovered that age can help predict preoperative anxiety levels. Age-related decreases in anxiety frequency were seen ($p<0.001$). The link between education level and preoperative anxiety was substantial ($p=0.005$). 150 patients (39%) with primary or illiterate experienced substantial preoperative anxiety. In the group with intermediate level education completed, this rose to 188 (49%) people. Most patients (46,

or 55%) who experienced anxiety did so more frequently were postgraduates.

Figure: 1



DISCUSSION

Patients who are scheduled for surgery may experience anxiety as a reaction to stress. Analyzing and measuring anxiety is challenging, just like with pain. Researchers have previously discussed a range of techniques for measuring anxiety. In general, these were either objective techniques that assessed the activity of stress hormones or self-reporting questionnaires. (19) Since it has shown success in evaluating anxiety across demographic and ethnic groups and is available in several languages, the State Trait Anxiety Inventory questionnaire is presently considered the gold standard among the tools. This questionnaire has three primary shortcomings: it is too long (20 questions in total), the patient needs explanations, and the patient has to be literate to comprehend and complete it. Various scales were developed and assessed in relation to STAI. (16) The Visual Analogue Scale which consists of a 100-millimetre straight line with 0 at its extreme left and 100 at its extreme right, is one of the simpler scales that can be used. According to the literature, it correlates well with STAI and can be used to assess anxiety. This scale is used to measure pain; thus, anesthesiologists are also familiar with it. (20) The frequency of preoperative anxiety in our study are 46 (12%) no or low Anxiety, 187 (49%) moderate Anxiety and 151 (39%) high Anxiety suggested by STAI score of more than 44. This result was similar to the previous studies done in western population and Pakistani population. Anxiety levels were discovered to be correlated with increased education. Domer et al. and Cuomo et al, but not other investigations,

support these observations. Higher educated patients were probably more informed about the risks associated with anesthesia and surgery. Additionally, it was found in earlier studies that patients with higher levels of education tended to seek out information more frequently, which was linked to higher levels of anxiety. We also observed that females were more anxious than males. Some previous studies support this finding while others found that gender was not a determinant of preoperative anxiety. (21) Anxiety levels were discovered to be correlated with increased education. Domer et al. and Cuomo et al, but not other investigations, support these observations. Higher educated patients were probably more informed about the risks associated with anesthesia and surgery. Additionally, it was found in earlier studies that patients with higher levels of education tended to seek out information more frequently, which was linked to higher levels of anxiety. In our study, being older was linked to a drop in preoperative anxiety. Our findings concur with those of Kindler et al and Iftikhar Uddin et al, but they diverge from those of Domer and colleagues, who did not identify age as a factor in preoperative anxiety. The kind of surgery was not a significant factor in predicting preoperative anxiety in some earlier research by Merman et al and Boker et al, otolaryngological and thoracic operations were linked to greater levels of anxiety in one study by Kindler et al. According to a study by Muhiddin Tadesse et al, anxiety is frequently caused by concerns about one's family, worry about consequences, and

postoperative pain from surgery. Anesthesia and surgery both had mean anxiety scores of 38.1426.05. Statistically speaking, women experienced significantly more pre-operative anxiety than men ($p < 0.01$). The most prevalent causes of anxiety were worry about family for 173 (89.5%) patients, fear of complications for 168 (87%) patients, operation outcomes for 159 (82.4%) patients, and postoperative discomfort for 152 patients (78.8 percent). 56 percent of patients believed that a thorough description of the procedure and anesthesia would reduce their anxious conditions. While our Current studies consist of 384 participants including 173 (45.1%) male and 211 (54.9%) female. Age of participants was ranged between 18 to 65 years with a mean 34.22 ± 18 and SD deviation is 13.735. As for as the education level of the participants is concern 134 (34.9%) were illiterate, 16 (4.2%) had primary level of education, 75 (19.5%) were Middle level, 59 (15.4%) were SSC level, 54 (14.1%) were HSSC level, 46 (12%) have master level of education. also, we find that female have high ratio of anxiety then male. Percentage of Patients' anxiety levels were calculated where 12% has no or low Anxiety, 48.7% have moderate Anxiety and 39.3% have very severe anxiety.

CONCLUSION

The purpose of the study was to determine how frequently patients in Pakistan's tertiary care hospital district of Mardan (KPK) experienced pre-operative anxiety prior to surgery. Patients in this study range in anxiety levels from none at all, or mild anxiety, to moderate anxiety, and severe anxiety. Anxiety levels are influenced by a variety of factors, including gender, educational attainment, and the kind of operation. The recent study also addressed a few recommendations that would offer some parameters for determining an individual's level of anxiety. Anxiety was adversely connected with past surgical experience and preoperative anesthesia clinic visit, although it was favorably correlated with female gender, younger age, and better educational position.

STUDY LIMITATIONS

This study had several drawbacks. First of all, because this study was conducted at just one location, we were able to assess pre-operative

Anxiety at a tertiary care hospital. Future multiple studies are urged to contrast other industries, including the commercial sector, public Hospitals, and military hospitals. Regarding the design and execution of the survey, this study was subject to several restrictions. The results of the study are less generalizable because it was a component of a single-center survey. However, the very high sample size and our stringent handling of missing data exceed the disadvantages of this potential bias.

RECOMMENDATIONS

Per-operative visits to wards to aware the patients about surgery and anesthesia plans. The need of establishment of preoperative counselling clinics and properly informed consent taken before surgery for reducing preoperative anxiety. Proper history taking and formal communication of doctor or anesthetist toward patients and using of premedication to reduce preoperative anxiety.

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