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# Preoperative Anxiety and Its Determinants Among Patients Scheduled for Major Surgery: A Hospital Based Study

Ramesh Ghimire<sup>1, \*</sup>, Pramila Poudel<sup>2</sup>

<sup>1</sup>Department of Anesthesiology and Critical Care, National Medical College and Teaching Hospital, Birgunj, Nepal

<sup>2</sup>Department of Child Health Nursing, National Medical College and Teaching Hospital, Birgunj, Nepal

## Email address:

drghimire05@gmail.com (R. Ghimire)

\*Corresponding author

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**Abstract:** Surgery is considered as a life threatening or a major concern that need significant psychological adaptation whether it be a major or a minor one. Pre-operative period is a stressful event that triggers specific emotional, cognitive and physiological response of a patient. Anxiety during this period is determined by various factors that need to be considered by anesthesiologists and the team. A descriptive cross sectional study was conducted to assess the prevalence and determinants of pre-operative anxiety among adult patients scheduled for major surgery in a teaching hospital at Parsa district, Nepal using State and trait inventory (STAI) and a checklist prepared to assess the determinants of anxiety. The obtained data were analyzed by descriptive and inferential statistics using SPSS 16 version. The result of the study revealed that 38.2% of the patients were in the age group of 29-38 years. Among total patient studied 85.3% were scheduled for elective surgery. The mean anxiety score was 44.25±5.97. Majority 70.6% had preoperative anxiety at moderate level. The level of anxiety was significantly associated with age and type of surgery at (p value 0.030) and (p value (0.028) respectively. The major determinants of anxiety were concern about family, financial crises due to surgery, fear of unawakening from anesthesia, and the outcome of surgery. Patient needs to be assessed regularly for anxiety during their pre anesthetic check up by an anesthesiologist thus implementing anxiety reducing activities among the patients.

**Keywords:** Preoperative Anxiety, Major Surgery, Patients

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## 1. Introduction

Anxiety is described as a vague, uneasy feeling, the source of which is often nonspecific and unknown to the individual but known to cause abnormal hemodynamics as a consequence of sympathetic, parasympathetic and endocrine stimulation. [1].

The preoperative period is well known to be anxiety provoking for most patients scheduled for surgery. Patient experience different levels of anxiety when undergoing surgery and it is commonly associated with loss of control over self and surrounding, concerns regarding anesthesia and its outcome, unwanted diagnoses and prognosis, postoperative pain and fear of death. [2].

Anxiety may occur in any person undergoing surgery either in a transient or a chronic form thus triggering specific emotional, physiological, psychological and spiritual responses of the patient which may continue throughout the

postoperative period thus causing difficulties in managing postoperative pain. Psychological preparation for invasive procedures has been based on the rationale that high levels of preprocedural fear are determinants of patients' subsequent adaptation during their perioperative period. [3].

There are two types anxiety state and trait anxiety. Trait anxiety is seen as relatively permanent personality characteristic, whereas state anxiety is seen as a transitory fluctuating state, increasing in surgical patients. Transitory or state anxiety level is high in threatening circumstances, and relatively low in situations in which there is little or no danger. However, trait anxiety is not affected by situational stress. Consistent with these assumptions from trait-state anxiety theory, a number of studies indicate that state anxiety is elevated prior to surgery and declined after surgery and during post-operative recovery period. [4].

Intervention such as developing good rapport with patient and

family, positive doctor /patient and or Nurse patient relationship, education, diversional activities, psychotherapy can be intervened before and after surgery to alleviate the level of anxiety among patients. Meticulous assessment of anxiety by an anesthesiologist plays a vital role in his planning as the response to anesthesia and analgesia in anxious patients is different when compared with non-anxious patients. Patients with high level of preoperative anxiety tend to require larger doses of induction agents and analgesics and tend to have longer hospital stays. [5]The aim of this study was to assess the prevalence of preoperative anxiety and its determinants among the patients scheduled for major surgery.

## 2. Materials and Methods

### 2.1. Study Area and Population

This study was conducted in a private medical college with 752 bedded multispecialty Teaching Hospital located at Birgunj sub Metropolitan, a commercial city which lies in Parsa district of Nepal. Nepal is a developing Asian country which has recently entered from its unitary system into a new “Federal Democratic Republic System”. The study population were all the adult patient scheduled for major surgery during the data collection period. The inclusion criteria were age > 18 years, physical status of American Society of Anesthesiologists (ASA) class 1–3 and ability to understand and respond in Nepali and Bhojpuri language.

### 2.2. Type of Study

A descriptive cross sectional research design was adopted to conduct the study.

### 2.3. Size Determination and Sampling Technique

A representative sample size of 68 was obtained using nonprobability purposive sampling method and for sample size determination, the general surgery (major) register for the year 2074 was reviewed from hospital record section. Taking in account the no of cases per year to be 966 sample sizes was calculated using Solven’s formula. On aggregate the no of cases per month were 81.

$$n = N/1 + Ne^2$$

$$81/1 + 81 (0.05)^2$$

$$n = 68$$

### 2.4. Data Collection and Analysis

Data was collected from selected patients at the month of September 2018 using pretested structured interview schedule via face to face interview technique. The questionnaire consisted of three (3) sections. Section A consisted of 9 questions related to socio-demographic characteristics of the patient while Section B consisted a 12 items checklist related to pre-operative anxiety factors and section C consisted of State –Trait Anxiety Inventory (STAI) of Spleberger, which contains 20 items for measuring state anxiety and is categorized as:

Scores 0-20= no anxiety

Scores 21-40= mild anxiety

Scores 41-60= moderate anxiety

Scores 61-80= severe anxiety

Reliability was tested for items in section B only and the obtained value was ( $r=0.83$ ). The collected data was organized coded and entered in Ms- Excel and imported to SPSS 16 version for further statistical analysis.

### 2.5. Ethical Consideration

Ethical clearance was obtained from the Institutional Review Committee of National Medical College and Teaching Hospital. Approval for conducting the study was taken from the head of department of Anesthesiology and critical care prior to data collection.

## 3. Results

The result of the study revealed that 38% of the patients were in the age group of 29-38 years. Regarding sex 54.4% were male and remaining 45.6% were female. Similarly, majority 63.2% belong to Hindu religion. Regarding occupation more than 2/3<sup>rd</sup> of patient were free workers. Meanwhile, majority 76.5% of patient were undergoing surgery for the 1<sup>st</sup> time. Regarding type of present surgery 85.3% of the patients were undergoing elective surgery. Similarly 28.2% of patients had 10001-20000 Nrs as monthly family income.

Table 1. Determinants of Anxiety.

Items	Frequency		Percentage	
	Yes	No	Yes	No
Fear of death	24	44	35.3	64.7
Fear of result of surgery	43	25	63.2	36.8
Fear of financial crises	54	14	79.4	20.6
Fear of blood transfusion	23	45	33.8	66.2
Fear of postoperative pain	37	31	54.4	45.6
Fear of physical disability	29	39	42.6	57.4
Fear of being NPO	30	38	44.1	55.9
Stress of change in environment	30	38	44.1	55.9
Lack or inadequate information	39	29	57.4	42.6
Concern about family	58	10	85.3	14.7
Terminologies and language used	33	35	48.5	51.5
Fear of unawakening from anesthesia	50	18	73.5	26.5
	68		100	

Table 1 reveals the presence of determinants of pre-operative anxiety among patients scheduled for major surgery. Majority 85.3% has concern about family. Similarly, 79.4% had fear of financial crises due to surgery and

hospitalization. Meanwhile 73.5% reported that they had fear of unawakening from anesthesia after surgery. Similarly 63.2% had fear of the outcome of surgery. Similarly 54.4% reported that they had fear of post-operative pain.

**Table 2.** Prevalence of anxiety at various level.

Variable	Frequency	Percentage
Mild Anxiety	20	29.4
Moderate Anxiety	48	70.6
Total	68	100.0

Table 2 reveals that majority 70.6% of the patients had moderate level of anxiety whereas 29.4% had mild anxiety. overall prevalence was 100%.

**Table 3.** Mean anxiety Score.

Variable	Possible Obtainable Score	Mean $\pm$ SD	Mean percentage	Range
Anxiety Score	80	44.25 $\pm$ 5.9735	55.31	58-33

Table 3 reveals that mean anxiety score was 44.25 $\pm$ 5.9735.

**Table 4.** Association between Level of Anxiety with Socio demographic variables.

Variables	Level of Anxiety		X <sup>2</sup>	P value
	Mild Anxiety No (%)	Moderate Anxiety No (%)		
Age				
18-28	1 (5.9)	16 (94.1)	4.691	0.030*
29-38	8 (30.8)	18 (69.2)		
39-48	8 (50.0)	8 (50.0)		
49-58	3 (33.3)	6 (66.7)		
Types of Surgery				
Elective	20 (34.0)	38 (65.5)	4.813	0.028*
Emergency	0 (0.00)	10 (100.0)		

Significant level at < 0.05 \* likelihood ratio \*\* Linear by linear

Table 4 reveals that age and type of present surgery was associated with the level of pre operative anxiety among the patient scheduled for major surgery with (p value 0.030) and (p value 0.028) respectively.

## 4. Discussion

Anxiety is a common response to stress and is present in patients scheduled for surgery. Patient anxiety is often neglected during anesthesia and the effects are deleterious. Patients with a higher level of preoperative anxiety have higher postoperative anxiety scores. [6] According to the finding of our study the prevalence of anxiety among preoperative patient was found to be 100% according to STAI score and was scored as mild and moderate anxiety whereas in other study only 70.3% of patient had anxiety as reported by STAI score of more than 44. [7].

In the present study majority (38.28%) of patients were in the age group of 29-38 whereas the prevalence of anxiety was higher among the patients in the age group 18-28 which constitutes only 25% of total patients studied. Amongst them 94.1% had moderate anxiety suggesting that preoperative anxiety was higher in younger patients and the result is supported by another similar study. [8] present study revealed that Christian (100%) were moderately anxious as compared to muslim (87.2%) and hindus (62.8%). This

finding is congruent with a study that found Muslims were less frequently anxious (45.2%) compared to Christians (62.6%) in the preoperative period. We can assume that religiosity might be associated with higher level of self-esteem and subjective well-being. But religion was not an independent predictor for preoperative anxiety in both of the studies. [9].

The finding of present study suggests that majority of the patients were scheduled for elective surgery but the prevalence of anxiety was prominent among the patient who were scheduled for emergency surgery. This finding is congruent with a study which reported that patients undergoing elective surgery are had a lower level of stress and subsequent anxiety as compared to patient with emergency surgery. [10].

The result of present study revealed that patients who have had previous experience of surgery were less likely to have anxiety whereas those patients undergoing surgery for the 1<sup>st</sup> time had moderate level of anxiety and prevalence was high among those patients. This finding is congruent to the finding of another study which concluded that Patients who had previous surgical experience would be less anxious than patients waiting for surgery for the first time. [10].

There are various determinants of preoperative anxiety among the patients scheduled for major surgery. According to the finding of present study the major determinants were

concern about family, financial crises due to surgery and hospitalization, outcome of surgery, fear of awakening from anesthesia etc. The finding is supported by another similar study. [11].

When following the literature multiple studies have suggested that more information is needed to reduce anxiety. The anesthetist's visit prior to surgery fulfills two objectives: to provide a platform for patients to clarify their doubts about anesthesia and customization by the anesthetist of premedication, both of which help to allay anxiety. Adequate management of anxiety may result in a smoother induction and even a better outcome of surgery. [12] Preoperative surgical and anesthetic information provision had protective effect on preoperative anxiety. Many studies suggest that different modalities of information provision and patient education minimize the level of preoperative anxiety. [13].

So, it is very important for an anesthetist to properly assess the level and determinants of anxiety among the patients undergoing surgery to plan for interventions that are required to reduce the level of anxiety via avoiding the anxiety provoking factors. The concept of one patient one anaesthesiologists can be an effective way to alleviate the anxiety of patient at various level through their empathic attitude during the preoperative visit when continuous care is provided by the same anaesthesiologist. [14].

## 5. Conclusion

Based on the findings of study it can be concluded that the majority of the patient underwent major surgery had moderate level of anxiety. The major determinants of anxiety were concern about family, financial crises due to surgery, fear of unawakening from anesthesia, and the outcome of surgery. Patient needs to be assessed regularly for anxiety during their pre anesthetic check up by an anesthesiologist thus implementing anxiety reducing activities among the patients. Hospital should make arrangement for various activities related to coping skills, diversion therapies, dissemination of information related to the stressors, clarifying misconceptions related to surgery and anesthesia so as to facilitate the patient experience a surgery and hospitalization that is free of fear and anxiety.

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