Study to Assess Level of Preoperative Anxiety in Patients Scheduled for Surgery

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ABSTRACT

Background: Pre-operative anxiety is unpleasant state of tension or uneasiness that results from patient doubt and fear before an operation. This study aims at assessing level of state and trait anxiety and other associated factors among preoperative patient.

Methods: A descriptive cross-sectional study was done among 195 patients above 18 years of age planned for elective surgery the following day in different departments in tertiary care center. State and Trait Anxiety Inventory and self-designed semi structured pro-forma was used to assess anxiety and patient particulars respectively.

Results: There were 195 patients in study among which 93(47.7%) underwent major surgery and 102 (52.3%) underwent minor surgery. The mean State Anxiety Score was 45.89±12.502. The mean Trait Anxiety Score was 43.17±9.342. State and Trait anxiety differed significantly in male and female patients. Trait Anxiety was associated with education and marital status.

Conclusions: There was no significant difference in anxiety level in patient undergoing major and minor surgery. Male and female patients differed significantly in both State and Trait Anxiety.

Keywords: Preoperative anxiety; state anxiety; trait anxiety

INTRODUCTION

Anxiety disorder is feature of excessive fear and/or anxiety resulting in behavioral and functional disturbances.[1] pre-operative anxiety is unpleasant state of uneasiness due to doubt and fear. This normal, predictable response is seen as problem, and surgical staffs make efforts to reduce anxiety.[2] Health care professionals are using little or no tools to access anxiety, resulting less information about preoperative anxiety. Different factors have been identified cause of anxiety in studies.[3]

Study from Ethiopia showed significant preoperative anxiety (70.37%) and fear of death being most common.[4] Study from Pakistan showed mean anxiety score to be 57.65%.[5] Anesthetic information provision and intra-operative apprehension are two areas of anxiety seen in majority patient.[6] Studies have shown anxiety causes different physiological responses.[7] Study from Turkey suggested anxiety testing is feasible during the preoperative period.[8] Review in Nepal concluded preoperative counseling and proper education regarding surgery reduce preoperative anxiety.[9]

This study aims to identify the anxiety level of patient who are planned for operation using State and Trait Anxiety Inventory (STAI).

METHODS

A cross-sectional study was done in Tertiary care center of Kathmandu valley, Nepal. Patient from department of Surgery, Orthopedics, Gynecology and ENT who were above 18 years were taken. Patients undergoing elective surgery the following day were selected for study. Both male and female participants were included. Patient who gave informed written consent were taken under study. Ethical approval for study was taken from Institutional Review Board of same center.

Patients diagnosed as any psychiatric condition under medication, who are using any substances like alcohol and other substances, who denied written consent and semiconscious /Unconscious patients were excluded from study

Sample size calculation was using the formula for sample size by proportion using the proportion of 85.1% from the

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similar study that was conducted prior.[10] Total calculated sample was 195 from the formula.

STAI was used as a tool of study. The STAI is an introspective psychological inventory consisting of 40 self-report items pertaining to anxiety affect. The STAI was constructed by Charles Spielberger et. al. based on the state-trait distinction proposed by Raymond Cattell in 1961.[11] The Spielberger State-Trait Anxiety Inventory state and trait scores (STAI-S and STAI-T) were used to characterize the patient's' anxiety symptoms. The STAI-S measures the transitional emotional status evoked by a stressful situation, such as surgery. The STAI-T score reflects relatively enduring individual differences in the likelihood of anxiety.[11] Cut off point for low anxiety and high anxiety level was taken as 44 and for trait anxiety 40 was taken as cut off point for low trait anxiety and high anxiety trait.

Questionnaire was used as method of study. Patient were asked to tick their anxiety level on 40 questions of STAI Inventory. Questionnaire used were in both English and Nepali language. The questioneer was converted to Nepali language by the export on translation and question was re-translated to English by the export which was same as the English version. The Nepali version was used for the study then.

A a semi-structured proforma was used to extract information regarding patient particulars and other relevant information.

Purposive sampling method was used for data collection and level of significance used for this study was 95%. Data was entered and analyzed using SPSS 16.

RESULTS

There were 195 patients in the study among which 93 (47.7%) underwent major surgery and 102 (52.3%) underwent minor surgery. The mean State Anxiety Score was 45.89±12.502. The mean Trait Anxiety Score was 43.17±9.342. Among the participants 105 (53.8%) fall under low state anxiety group (less than 44) and 90 (46.2%) fall under high anxiety group (more than 44). Similarly, 86 (44.1%) fall under low trait anxiety (less than 40) and 109 (55.9%) fall under high trait anxiety trait (more than 40).

The major demographical findings were as shown in the table 1.

Table 1. Demographic characteristic of study population.

		Number (%)
Gender	Male	93 (47.7)
	Female	102(52.3)
Age	18-30	68(34.9)
	31-45	57(29.2)
	46-60	39(20)
	61 and above	31(15.9)
Marital Status	Married	138(70.8)
	Unmarried	57(29.2)
Education	Literate	162(83.1)
	Illiterate	33(16.9)

Table 2. Association of different variable with patient undergoing General Anesthesia and non General Anesthesia.

Variable		GA	Non-GA	Chi-Square Value	P value
Gender	Male	32 (16.4%)	61 (31.3%)	12.576	0.000391
	Female	61 (31.3%)	41 (21.0%)		
Education	Literate	80 (41.0%)	82 (42.1%)	1.096	0.295037
	Illiterate	13 (6.7%)	20 (10.3%)		
Previous Surgery	Yes	31 (15.9%)	36 (18.5%)	0.83	0.77337
	No	62 (31.8%)	66 (33.8%)		
State Anxiety Score	Lower Anxiety Group	49 (25.1%)	56 (28.7%)	.096	0.756769
	Higher Anxiety Group	44 (22.6%)	46 (23.6%)		
Trait Anxiety Score	Lower Anxiety Group	37 (19.0%)	49 (25.1%)	1.344	0.246248
	Higher Anxiety Group	56 (28.7%)	53 (27.2%)		

Male and female differed significantly in high and low state anxiety group. Female were found to have high

state anxiety as compared to male. There was significant difference among higher and lower trait anxiety in higher and lower state anxiety group. This showed that people who had high state anxiety also had high trait anxiety.

Table 3. Association of different variables with High and Low State Anxiety.

		State Anxiety			
		High Anxiety	Low anxiety	Chi square	p value
Gender	Male	34 (17.43%)	59 (30.25%)	6.586	0.010279
	Female	56 (28.7%)	46 (23.6%)		
Trait Anxiety	High Anxiety	68 (34.9%)	22 (11.3%)	26.201	<0.00001
	Low Anxiety	41 (21.0%)	64 (32.8%)		

Male and female differed significantly in high and low trait anxiety. Similarly, there was significant difference among married and unmarried in high and low trait anxiety. Married population showed high trait anxiety as compared to unmarried. There was significant difference among literate and illiterate in high and low trait anxiety as shown in table 4.

Table 4. Association of different variables with High and Low Trait Anxiety.

Variable	Trait Anxiety	High Anxiety	Low Anxiety	Chi-Square Value	P value
Gender	Male	40 (20.5%)	53 (27.2%)	11.977	0.00539
	Female	69 (35.4%)	33 (16.9%)		
Education	Literate	85 (43.6%)	77 (39.5%)	4.564	0.032652
	Illiterate	24 (12.3%)	9 (4.6%)		
Marital Status	Married	88 (45.1%)	50 (25.6%)	11.863	0.000572
	Un-married	21 (10.8%)	36 (18.5%)		

In the study more number of people had low state anxiety of 105 (53.84%) but high trait anxiety of 109 (55.89%).

Table 5. Mean State anxiety score and Trait anxiety score and their predictors.

Parameters	Mean±SD	P value	F value
State anxiety score according to Anesthesia			
GA	46.14±12.23	0.788	0.072
Non GA	45.66±12.8		
Trait anxiety score according to Anesthesia			
GA	41.3±15.537	0.650	0.207
Non GA	40.21±17.857		
State anxiety score according to gender			
Male	41.63±8.992	0.005	4.929
Female	48.27± 9.476		
Trait anxiety score according to gender			
Male	41.63+/-8.992	0.028	0.072
Female	44.58±9.476		
State anxiety score according to presence of prior surgery			
Previous surgery	45.01±11.932	0.485	0.496
No previous surgery	46.34±12.813		
Trait anxiety score according to presence of prior surgery			
Previous surgery	43.37±9.023	0.836	0.046
No previous surgery	46.34±12.813		
State anxiety score according to education status			
Literate	45.23±12.521	0.106	2.630
Iliterate	49.09±12.089		
Trait anxiety score according to education status			
Literate	42.54±9.384	0.034	4.537
Iliterate	46.30±8.597		

DISCUSSION

Spielberger defined anxiety as negative or threatening emotion that one feels generally, in long term (Trait anxiety), or in a specific situation that fluctuates over time (State anxiety).[11] Pre-operative anxiety is normal phenomenon in most patient undergoing elective surgery.

This study showed that the frequency of pre-operative anxiety was 53.8% as suggested by STAI score of more than 44. This showed that more than half of the patient undergoing elective surgery experienced high level of pre-operative anxiety. The finding of the study done in Ethiopia showed that higher level of pre-operative anxiety (70.3%)[4] as compared to this study. This could be because of the lack of communication between the doctor and the patients as mentioned in the study.[12]

Female were found to have high level of pre-operative anxiety as compared to male which was statistically significant. Similar result was obtained in a study done in Pakistan[13] and Turkey[8] whereas, another study showed no significant difference between gender and pre-operative anxiety.[4]

In this study no significant difference in State anxiety level was seen between patient undergoing major (GA) versus minor (non-GA) surgery. Similarly, no significant difference was seen between education and State anxiety level. In Contrary a study done in Turkey suggest that individuals with a high level of education may more accurately estimate the risk of surgery; however, individuals with low levels of education may fear the unknown and therefore have high levels of anxiety.[8]

In this study, the assessment of Trait anxiety showed that there was significant co-relation between high Trait anxiety and pre-operative anxiety i.e., State anxiety. A study showed that patients with higher levels of trait anxiety were more likely to experience higher levels of anxiety throughout their admission[14] which is similar to this study.

Female had high Trait anxiety level as compared to male which was statically significant in this study. Similarly, Trait anxiety level differed significantly with level of education and marital status.

STAI can have possible Biases. In certain cases, like the profession of the patient might motivate respondents to exaggerate the anxiety. For example, individuals engaged in high demand profession (e.g., law enforcement, air traffic control etc) might be inclined to overemphasize the impact of job-related stress in their response to STAI.[15] Similarly female subjects are more emotionally responsive; or might more likely that due to less cultural bias towards admitting emotionally, women are more open than male to responding anxiety.[15] Similarly some patient might fake bad in wish of some financial gain.

CONCLUSIONS

This study concludes that both State anxiety and Trait Anxiety was found to be higher in-patient undergoing surgery. There was no difference in anxiety level in patient undergoing major and minor surgery. Male and female patients differed in both State and Trait Anxiety. Trait anxiety level differed with level of education and marital status. Patient with anxious personality show high level of anxiety in specific situations like pre-operative period.

Being important component of surgical management of any patient is management of anxiety. So we like to recommend managing anxiety through pharmacological intervention (anxiolytics) and non-pharmacological intervention such as providing information about surgery, communicating with patient and establishing a trustworthy, joyful and relaxing environment.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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