

Study Of Prevalence Of Anxiety And its Contributing Factors Among Patients Undergoing Surgery In a Tertiary Care Hospital

Subedi S¹, Paudel K², Koirala M³, Chhetri P⁴

1. Associate Professor, Department of Psychiatry, UCMS, Bhairahawa, Nepal 2. Lecturer, MMIHS, Kathmandu, Nepal, 3. Acting- Incharge, Department Of Nursing, Crimson Hospital, Manigram, Rupandehi, Nepal 4. Lecture, Department of Community Medicine, UCMS, Bhairahawa, Nepal

E-mail *Corresponding author : sandipsubedi@hotmail.com

Abstract

Introduction: Anxiety is a vague, uneasy feeling, the source of which is often non-specific but known to cause abnormal hemodynamic changes as a consequence of sympathetic, parasympathetic and endocrine stimulation. Most patients awaiting elective surgery experience anxiety. The degree, to which patient develops anxiety depends on many factors like age, gender, type and extent of the proposed surgery, previous surgical experience, and personal susceptibility to stressful situations. This study was conducted to find out the prevalence of preoperative anxiety and factors contributing to it.

Material And Method: This is a cross-sectional study done among 74 pre-operative patients admitted the day before elective surgery in Department Of Surgery Universal College Of Medical Sciences Teaching Hospital, Bhairahawa. Socio-demographic as well contributing factor questionnaire, semi structured pro forma by interview method and Beck Anxiety Inventory Scale (BAI) Nepali Version were used to collect the data.

Results: The findings of the study revealed that 90.54%, had very low level of anxiety and 2.70% of patients had severe pre-operative anxiety. The bivariate logistic regression analysis showed statistically significant association between family income ($p= 0.004$, AOR=2.03, CI= 0.009-2.567), family support ($p< 0.001$, AOR= 2.34, CI= 0.003-3.368), expected duration of hospital stay ($p= 0.049$, AOR=8.889, CI= 78.051-78.051), clarity on given information by health care providers ($p< 0.001$, AOR= 53.33, CI=7.165-396.99), staffs friendliness ($p< 0.001$, AOR= 21.01, CI= 3.450-127.82), fear of nil per oral ($p= 0.015$, AOR= 2.32, CI= 0.26-3.67) and level of pre-operative anxiety.

Conclusion: It is concluded that varying degree of pre-operative anxiety were found in patients undergoing surgery. Providing adequate information about Peri-Operative procedure can help in reducing these anxiety.

Keywords: Peri-Operative Anxiety, Anxiety, Contributing Factors

INTRODUCTION

Anxiety is a vague, uneasy feeling the source of which is often nonspecific and unknown to the individual but known to cause abnormal hemodynamic changes as a consequence of sympathetic, parasympathetic and endocrine stimulation. The prevalence of pre-operative anxiety was 32% in patients awaiting general surgery.¹

Globally, the reported incidence of pre-operative anxiety ranges from 60% to 92% in surgical patients. Pre-operative anxiety is a challenging concept in the pre-operative care of patients. Most patients awaiting elective surgery

experience anxiety. The degree to which patient's anxiety depends on many factors, includes age, gender, type and extent of the proposed surgery, previous surgical experience, and personal susceptibility to stressful situations.²

The study conducted at Rockville Pike, USA showed high degree of pre-operative anxiety and the prevalence of pre-operative anxiety was 65.6%.³ The prevalence of pre-operative anxiety in women and men was 45% and 15% respectively.⁴ Selected demographic variables like, age, gender, type of surgery, level of

education were associated with pre-operative anxiety levels.⁵

Factors responsible for pre-operative fears depend on age, gender, single or divorce, education, uncertainty of the exact day of surgery, patient's ability to understand the events that occur during surgical anesthesia, fear of surgery, separation from their family, financial loss, postoperative pain, and fear of death and fear of unknown origin.⁶ Lack of adequate and timely information to patients during the pre-anesthetic consultation increases patient anxiety.⁷

It is important to identify factors associated with high pre-operative anxiety in our tertiary level hospital so as to develop appropriate management plan. In our knowledge, very few research studies have been conducted to find out the prevalence of pre-operative anxiety in Nepal. Therefore, this study was designed to identify the level of anxiety in pre-operative patients and to know the relation between them.

MATERIAL AND METHOD

This is a cross-sectional study done among 74 pre-operative patients admitted the day before elective surgery in Department Of Surgery, Universal College Of Medical Sciences Teaching Hospital, Bhairahawa from 8th October 2018 to 7th January 2019.

Level of anxiety refers to the anxiety level distinguished by Beck Anxiety Inventory (BAI): very low anxiety (0-21), moderate anxiety (22-35), severe anxiety (exceeds 36) and highest score is 63. A sample size of 74 was calculated (Slovin's formula: $n = \frac{N}{1+Ne^2} = \frac{91}{1+91 \times 0.05^2} = 74$).

Non-probability convenience sampling technique was applied for data collection. Ethical approval for the study was obtained from Institutional Review Committee. Confidentiality of the data was maintained and the data was used for research purpose only.

Data were collected using socio-demographic data sheet, data sheet for various factors related to preoperative anxiety and level anxiety using BAI-21 items Nepali version⁸ likert scale ranging from 0-3. All the collected data will be analyzed by using descriptive (frequency, mean, percentage and standard deviation) and inferential (chi-square, bivariate logistic

regression) statistics with Statistical Package for Social Sciences (SPSS) software version 16.0.

RESULT

Table 1: Respondents' Socio-demographic Characteristics (N=74)

Variable		Frequency	Percentage
Age in years	20-39	57	77.02
	40-60	17	22.98
<i>Mean age ±SD = 37.93±15.79</i>			
Sex	Male	45	60.81
	Female	29	39.18
Ethnicity	Pahadi	45	60.82
	Madhesi	29	39.18
Educational status	Illiterate	16	21.62
	Literate	58	78.38
Occupation	Employed	19	25.68
	Unemployed	55	74.32
Duration of hospital stay	1-6 days	64	86.48
	7-12 days	10	13.52
Family income (Per Month)	>Rs.50,000	68	91.90
	≤ Rs.50,000	6	8.10
Type of family	Nuclear	32	43.24
	Joint	42	56.76

Majority (77.02%) of the respondents were from the age group 20-40 years with Mean age ± SD = 37.93±15.79. Three fifth (60.82%) of the respondents were male and from Pahadi. Majority of the respondents (78.38%) were literate. Majority (74.32%) of the respondents were unemployed. Majority (91.90%) of the respondents had more than Rs.50, 000/month family income. More than half (56.76%) of the respondents were from joint family.

Table 2: Respondent's Level Of Pre-Operative Anxiety (N=74)

Level Of Anxiety	Frequency	Percentage
Very Low	67	90.55
Moderate	5	6.75
Severe	2	2.70
Total	74	100

Table 2 shows the level of anxiety among preoperative patients. Majority (90.54%) of the respondents had very low anxiety, moderately was 6.75% and severe anxiety was 2.70%. Moderate to severe anxiety can be regarded as high anxiety.

Table 3: Association between Selected Socio-demographic Variables and Level of Pre-Operative Anxiety

Variables		Level Of Pre-Operative Anxiety		x ²	p value
		Low	High		
		No (%)	No. (%)		
Age in years	20-39	53(92.98)	4 (7.02)		
	40-60	14 (82.36)	3(17.64)	1.52	0.218
Sex	Male	42 (93.33)	3 (6.66)		
	Female	25 (86.20)	4 (13.79)	1.017	0.313
Ethnicity	Pahadi	39 (86.67)	6 (13.33)		
	Madhesi	28 (96.56)	1 (3.44)	2.290	0.130
Educational Status	Illiterate	11 (68.75)	5 (31.25)		
	Literate	56 (96.55)	2 (3.70)	2.016	0.445
Occupation	Formal	17 (89.47)	2 (10.53)		
	Informal	50 (90.90)	5 (9.10)	0.033	0.855
Duration Of Hospital Stay	1-6 days	59 (92.19)	5 (7.81)		
	7-12 days	8 (80.0)	2 (20.0)	1.229	0.268
Family Income (Per Month)	>Rs.50,000	64 (94.11)	4 (5.88)		
	≤ Rs.50,000	3 (50.0)	3 (50.0)	7.587	0.006*

*p<0.05 = significant

There was only statistically significant association between family income (P =0.006) and level of pre-operative anxiety.

Table 4 Association between Treatment Related Factors and Level of Pre-operative Anxiety (N=74)

Variables		Level Of Pre-Operative Anxiety		x ²	p value
		Low	High		
		No (%)	No (%)		
Family Support	Fully	65 (95.58)	3(4.41)		
	Partially	2 (33.33)	4(66.66)	14.101	0.001*
Type Of Planned Surgery	Major	30 (83.33)	6 (16.66)		
	Minor	37 (97.36)	1 (2.63)	4.641	0.031*
Type Of Planned Anesthesia	General	25 (92.59)	2 (7.40)		
	Others	42 (89.36)	5 (10.63)	3.446	0.328

*p<0.05 = significant

There were statistically significant relation between family support (p=0.001), type of planned surgery (p=0.031) and level of preoperative anxiety.

Table 5: Association between Provision of Information and Level of Pre-operative Anxiety

Variables		Level Of Pre-Operative Anxiety		x ²	p value
		Low	High		
		No (%)	No (%)		
Treatment Options	Informed	44 (93.61)	3 (6.38)		
	Not-Informed	23 (85.18)	4 (14.81)	1.364	0.243
Complications Of Surgery	Informed	21 (95.45)	1 (4.54)		
	Not-Informed	46 (88.46)	6 (11.53)	1.001	0.317
Pre-Operative Medications	Informed	37 (92.50)	3(7.50)		
	Not-Informed	27 (79.41)	7 (20.58)	4.676	0.031*
Expected duration of hospital stay	Informed	40 (97.56)	1 (2.43)		
	Not-Informed	27 (81.81)	6 (18.18)	5.634	0.018*
Clarity on given information	Yes	64 (96.96)	2 (3.03)		
	No	3 (37.50)	5 (62.50)	17.820	0.001*
Staffs Friendliness	Perceived	63 (95.45)	3 (4.54)		
	Not-Perceived	4 (50.0)	4 (50.0)	10.832	0.001*

*p<0.05 = significant

Table 6: Association between Respondent's Fear and Level of Pre-operative Anxiety

Variables	Level of Anxiety		χ^2	p value
	Low No. (%)	High No. (%)		
Fear of NPO				
Yes	10 (71.42)	4 (28.57)	5.751	0.016*
No	7 (95.0)	3 (5.00)		
Fear of part preparation				
Yes	10 (76.92)	3 (23.07)	2.756	0.097
No	57 (93.44)	4 (6.55)		
Fear of Gowning				
Yes	14 (77.77)	4 (22.22)	3.864	0.049*
No	53 (94.64)	3 (5.35)		
Fear of Cannulaization				
Yes	47 (87.03)	7 (12.96)	4.676	0.031*
No	19(95.0)	1 (5.0)		
Fear of occurrence of problem due to incompetency of health personnel				
Yes	24 (82.75)	5 (17.24)	3.304	0.069
No	43 (95.55)	2 (4.44)		
Fear of unknown result of surgery				
Yes	52 (89.65)	6 (10.34)	0.268	0.605
No	15(93.75)	1 (6.25)		
Fear of pain during and after surgery				
Yes	60 (89.55)	7 (10.44)	1.465	0.226
No	6 (85.71)	1(14.28)		
Fear of postpone of surgery				
Yes	22 (81.48)	5 (18.51)	3.913	0.048*
No	45(95.74)	2 (4.25)		
Fear of unknown environment of OT				
Yes	35 (83.33)	7 (16.66)	8.483	0.004*
No	30 (93.75)	2(6.25)		
Disturbed sleeping patterns				
Yes	16 (69.56)	7 (30.43)	10.063	0.001*
No	49 (96.07)	2 (3.92)		
Fear of death				
Yes	20 (76.92)	6 (23.07)	8.518	0.004*
No	47 (97.91)	1 (2.08)		

As shown in Table 5, The association between provisions of information about pre-operative medication, expected duration of hospital stay, clarity on given information, staff friendliness and pre-operative anxiety was statistically significant.

As shown in Table 6, Association between fears of NPO, cannulization, postpone of surgery, unknown environment of OT, disturbed sleep, death and level of preoperative anxiety.

Table 7: Bivariate Logistic Regression between Contributing Factors and Respondents' Level of Pre-operative Anxiety

Variables	B	AOR	95% CI for AOR		p value
			Lower	Upper	
Family income					
High		1			
Low	1.29	2.03	0.009	2.567	0.004*
Family support					
Fully		1			
Partially	1.67	2.34	0.003	0.180	0.001*
Type of planned surgery					
Major		1			
Minor	3.480	7.400	0.844	64.881	0.071
Expected duration of hospital					
Informed		1			
Not informed	5.669	8.889	1.012	78.051	0.049*
Pre-operative medication					
Informed		1			
Not informed	1.456	3.005	0.765	15.670	0.878
Disturbed sleeping patterns					
Yes		1			
No	1.173	2.889	1.012	9.051	0.447
Clarity on given information					
Yes		1			
No	11.45	53.33	7.165	396.99	0.001*
Staffs friendliness					
Perceived		1			
Not perceived	5.67	21.01	3.450	127.82	0.001*
Fear of nil per oral					
Yes		1			
No	1.35	2.32	0.26	3.67	0.015*
Fear of gowning					
Yes		1			
No	1.867	2.977	0.193	20.266	0.566
Fear of cannulization					
Yes		1			
No	2.308	9.004	0.345	10.905	0.077
Fear of unknown OT environment					
Yes		1			
No	3.441	5.678	0.045	6.578	0.493
Fear of death					
Yes		1			
No	1.012	2.007	0.015	2.044	0.164

*p<0.05 = significant

Bivariate logistic regressions shows that The respondents' who had low family income had 2 times more likely to have pre-operative anxiety than high family income (AOR= 2.03, CI: 0.009-2.567, $p = 0.004$). The respondents who had

partial family support had 2 times more likely to have pre-operative anxiety than fully family support (AOR= 2.34, CI: 0.003-3.368, $p < 0.001$). The respondents who had not informed about expected duration of hospital had 9 times more likely to have pre-operative anxiety than

informed about expected duration of hospital stay (AOR= 8.889, CI: 78.051-78.051, $p= 0.049$). The respondents who were not cleared on given information more likely to have 55 times pre-operative anxiety than cleared on given information (AOR= 53.33, CI: 7.165- 396.99, $p < 0.001$). The respondents who were not perceived staffs friendly more likely to have 21 times pre-operative anxiety than perceived staffs friendly (AOR=21.01, CI: 3.450-127.82, $p < 0.001$). The respondents' who had fear of nil per oral more likely to have 2 times pre-operative anxiety than no fear of nil per oral (AOR=2.32, CI:0.26-3.67, $p=0.015$).

DISCUSSION:

From the findings of the present study it is clear that more than one factor is responsible for causing pre-operative anxiety. The findings of study showed that 90.54 % of respondents had very low anxiety, 6.75% had moderate anxiety and 2.70% had severe anxiety. The study conducted by Acharya et al.⁹ in Kathmandu, Nepal shows 70% had very low anxiety, 23.20% had moderate anxiety and 7% had severe anxiety which is only comparable with this present study

The findings of the study shows 35.10% of respondents had fear of occurrence of problems due to incompetency of health personnel. The finding is not consistent with the study conducted by Nigussie et al.¹⁰ in Ethiopia which shows 14.5% of respondents had fear of occurrence of problems due to incompetency of health personnel.

The findings of the study showed that status of family income ($p= 0.006$), family support ($p= 0.001$), type of planned surgery ($p= 0.031$), information regarding expected duration of hospital stay ($p= 0.018$), pre-operative medications ($p= 0.031$), disturbed sleeping pattern ($p < 0.001$), clarity on given information provided by health care provider ($p < 0.001$) and staffs friendliness ($p < 0.001$), fear of nil per oral ($p= 0.016$), fear of gowning ($p = 0.049$), fear of cannulization ($p= 0.031$), fear of unknown environment of operation theatre ($p= 0.004$) and fear of death ($p= 0.004$) was statistically significant with the pre-operative anxiety these findings are comparable with several studies.^{11, 2}

CONCLUSION:

Based on the findings of the study it is concluded that there are various level of anxiety among pre-operative patients. No one single factor is responsible to contribute these levels of anxiety among them but there are multiple factors to contribute varying level of anxiety. Providing information regarding the peri-operative procedure and provision of some level of health insurance may decrease the level of anxiety among pre-operative patients.

ACKNOWLEDGEMENT: The authors would like to acknowledge and thank to entire team of Universal College of Medical Science (UCMS), Bhairahawa, Rupandehi, Nepal who directly or indirectly helped to complete this study. The authors would like to show their gratitude towards patients who willing participate in this study so that this study has completed.

FUNDING: None

CONFLICT OF INTEREST: None

REFERENCES:

1. Klopfenstein CE, Forster A, Van Gessel E. Anesthetic assessment in an outpatient consultation clinic reduces preoperative anxiety. *Canadian Journal of Anesthesia*. 2000;47(6):511.
2. Nigussie S, Belachew T, Wolancho W. Predictors of preoperative anxiety among surgical patients in Jimma University specialized teaching hospital, South Western Ethiopia. *BMC surgery*. 2014;14(1):67.
3. Atanassova M. Assessment of preoperative anxiety in patients awaiting operation on thyroid gland. *Khirurgiia*. 2009(4-5):36-9.
4. Ramesh C, Nayak BS, Pai VB, George A, George LS, Devi ES. Pre-operative anxiety in patients undergoing coronary artery bypass graft surgery—A cross-sectional study. *International journal of Africa nursing sciences*. 2017;7:31-6.
5. Gangadharan P, Assiri AM, Assiri AA. Evaluating the level of anxiety among pre-operative patients before elective surgery at selected hospitals in kingdom of saudi arabia. *International Journal of Current Research and Review*. 2014;6(22):37.
6. Sigdel S. Perioperative anxiety: A short review. *Glob Anaesth Perioper Med*. 2015;1(10.15761).
7. Jawaid M, Mushtaq A, Mukhtar S, Khan Z. Preoperative anxiety before elective surgery. *Neurosciences*. 2007;12(2):145-8.
8. Kohrt BA, Kunz R, Koirala N. Validation of the Nepali version of beck anxiety inventory. *Journal of Institute of Medicine*. 2007;26(3).

9. Acharya S, Joshi S, Pradhan A. Anxiety Level of Patients Undergoing Oral Surgical Procedures. *Journal of Nepal Health Research Council.* 2018;16(1):27-31.
10. Negussie N. *An Analysis of Factors Affecting Performance of Nurses in Public Hospitals and Health Centres in Addis Ababa: Addis Ababa University;* 2010.
11. Pokharel K, Bhattarai B, Tripathi M, Khatiwada S, Subedi A. Nepalese patients' anxiety and concerns before surgery. *Journal of clinical anesthesia.* 2011;23(5):372-8.