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PREVALENCE AND FACTORS RESPONSIBLE FOR PREOPERATIVE ANXIETY IN ELECTIVE SURGICAL PATIENTS

Anaesthesiology

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ABSTRACT

BACKGROUND:
Patients who undergo surgery experience acute psychological distress in the preoperative period. The objective of this study was to assess the prevalence and risk factors for preoperative anxiety in elective surgical patients.

METHODS:
A cross-sectional observational study was performed with 594 inpatients scheduled for elective surgery. Age more than18 years (ASA physical status I-II). Demographic information was collected using a structured questionnaire. Preoperative anxiety was assessed on Hospital Anxiety and Depression Scale (HADS).

RESULTS:
High prevalence (72.6%) of preoperative anxiety was observed and no significant difference noted on demographic factors. History of substance abuse significantly increase the incidence of preoperative anxiety and prior surgery is a significant factor to attenuate the preoperative anxiety.

CONCLUSION:
Preoperative anxiety is a finding in majority of elective surgical patients that should be managed for better care.

KEYWORDS

preoperative anxiety, elective surgical patients.

Introduction

Anxiety is a common feeling among patients undergoing surgical intervention in the preoperative period1. Hospitalization and surgery are critical negative life events, often abruptly imposed that may cause considerable stress. Although response to a negative situation like stress is an important means of adapting to altered environment and prerequisite for responding to potential threats2 but greater distress or anxiety prior to surgery is associated with a slower and more complicated postoperative recovery3. The most important single reason for pre-medicating patients before surgery is to reduce anxiety because if anxiety is sufficiently marked, it causes all the signs of sympathetic stimulation and stress. The heart rate and systolic pressure rise, the skin is pale and often sweaty, and the veins are characteristically constricted. There may be ventricular ectopic beats or in extreme circumstances ventricular fibrillation4. Anxious patients require higher doses of anaesthetic induction agents and postoperative analgesic drug[5,6].

Preoperative anxiety is described as an unpleasant state of uneasiness or tension that is secondary to a patient being concerned about a disease, hospitalization, anesthesia and surgery, or the unknown7. In addition, anxiety causes sleep disruption, nausea, fatigue, and inadequate responses to anesthesia and analgesia8.Anxiety is poorly evaluated and less addressed condition in preoperative period. Proper management of fear and anxiety by anesthesiologists may provide better preoperative assessment, less pharmacological premedication, smoother induction and may be even better outcome8. To reduce the incidence and intensity of anxiety among preoperative patients there is a need to assess its prevalence and identify the associated factors in the local population which can be modified in the management of patients by clinicians. This study was designed to assess the prevalence and determine the factors responsible for preoperative anxiety in the surgical patients at the hospitals attached with Government Medical College, Kota Rajasthan which is a tertiary care centre for a large number of patients of Hadoti region and surrounding area.

Aims of study:

1. To assess the prevalence of preoperative anxiety in the elective surgical patients.
2. To determine the factors responsible for preoperative anxiety in the above patients.
3. To find out and discuss the factors which can be modified for management of preoperative anxiety.

Method of study:

This was a cross-sectional observational study carried out at Hospitals attached with Government Medical College, Kota. Patients hospitalized for elective surgery were the participant for the study. On an average 40-50 patients get operated daily as elective cases. By random sampling 10% of the patients were selected for the study. Those included in the study were adult (>18 yrs) ASA grade 1 and 2 and who were sufficiently alert to respond the questionnaires and give consent to participate in the study. The data was collected over a period of 6 months from May 2017 to October 2017. Ethical clearance for the study was obtained from Institutional research ethics committee of Government Medical College, Kota. Those who were taking anti-anxiety or anti-depressant medications, or had been diagnosed with an anxiety disorder were excluded from the study. The patients who qualified for the study were then interviewed to collect sociodemographic data such as: Gender, Age, Marital status, highest degree of education, Substance use and History of prior exposure to surgery. Other information regarding common fear & apprehension of death during operation, harm during surgery, time and duration of surgery, blood loss during surgery, result of surgery, inadequate anaesthesia, complication of anaesthetic drugs, postoperative complications like nausea, vomiting, pain, poor healing etc, time taken to assume normal functioning of body and fear of any other worries of patient regarding surgery also obtained.

The anxiety was assessed on Hospital Anxiety and Depression Scale (HADS)10. The HADS is comprised of two sub scales, Depression and Anxiety. Each subscale has a score ranging from 0-21. HADS items are rated on a 4-point Likert-type scale ranging from 0-3, with higher scores representing greater symptoms of severity. Score of 0-7 indicate normal levels of anxiety, 8-10 indicate borderline abnormal anxiety and 11-21 suggests abnormal levels of anxiety. The anxiety sub-scale questions are numbered as 2, 4, 6, 8, 11, 12, 14 and these were used in present study. HADS gives clinically meaningful results as a psychological screening tool and can assess the symptoms severity. This scale is a valid and reliable self rating scale that measures anxiety and depression in both hospital and community settings11. This scale has high sensitivity and specificity[12].

The results were tabulated in frequency and percentage. Mean and standard deviation was calculated for age and anxiety scores of sample. Analysis was done with help of chi-square test. Level of significance was taken as $p<0.05$.

Results

The studied population constituted 594 patients including 62% males and 38% females scheduled for elective surgery. The mean age of

sample was 45.2 yrs. History of previous surgery was recorded in 25.4% cases. The sociodemographic characteristics are summarized in Table 1.

Table no 1 Sociodemographic variables of sample

Variables		n (N=594)	%
Gender	Male	368	62
	Female	226	38
*Age group	18-25	72	12.1
	26-35	127	21.4
	36-45	91	15.3
	46-55	115	19.4
	56-65	121	20.4
	>65	68	11.4
Marital Status	Unmarried	52	8.8
	Married	502	84.5
	Divorced/widow	40	6.7
Education	No formal education	81	13.7
	Primary education	116	19.5
	Secondary education	239	40.2
	Higher education	158	26.6
H/o Substance use	Yes	321	54
	No	273	46
H/o Surgery	Yes	151	25.4
	No	443	74.6

*Mean age (std deviation) of sample = 45.2 (16.2)

Table no 2 Distribution of patients as per HADS anxiety score

	N	HADS Anxiety Scoring			P value
		0-7	8-10	>10	
		n (%)	n(%)	n(%)	
Sample population	594	97 (16.3)	66 (11.1)	431 (72.6)	NA
Gender					
M	368	64 (17.4)	41 (11.1)	263 (71.5)	P>0.05
F	226	33 (14.6)	25 (11.1)	168 (74.3)	
Age groups					
18-35	199	35 (17.6)	22 (11)	142 (71.4)	P>0.05
36-55	206	24 (11.7)	19 (12.1)	157 (67.2)	
>55	189	38 (20.1)	19 (10.1)	132 (69.8)	
Marital status					
Unmarried	52	9 (17.3)	8 (15.4)	35 (67.3)	P>0.05
Married	502	82 (16.3)	50 (10)	370 (73.7)	
Single	40	6 (15)	8 (20)	26 (65)	
Education					
No formal education	81	14 (17.3)	11 (13.6)	56 (69.1)	P>0.05
Primary education	116	21 (18.1)	17 (14.7)	78 (67.2)	
Secondary education	239	36 (15)	26 (10.9)	177 (74.1)	
Higher education	158	26 (16.5)	12 (7.6)	120 (75.9)	
H/o Substance use					
Yes	321	41 (12.8)	39 (12.1)	241 (75.1)	P<0.05
No	273	56 (20.5)	27 (9.9)	190 (69.6)	
H/o Surgery					
Yes	151	41 (27.1)	14 (9.3)	96 (63.6)	P<0.05
No	443	56 (12.7)	52 (11.7)	335 (75.6)	

* Mean HADS score of anxiety (std deviation) of sample = 12.2 (3.9)

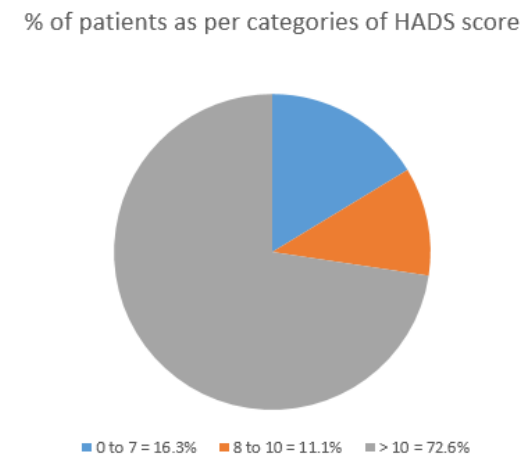
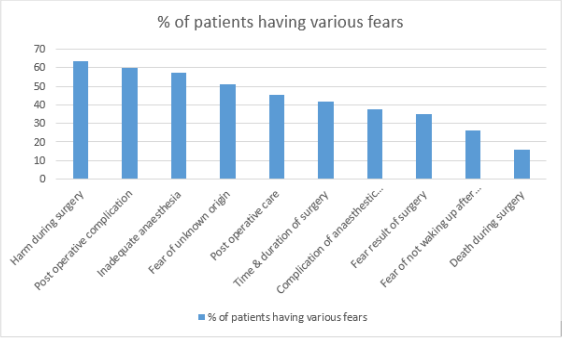


Table no 3 Fear or apprehension in Preoperative Anxiety Patients (HADS Anxiety >10)

	n	% (N=594)
Fears associated with surgery		
Time & duration of surgery	246	41.5
Harm during surgery	378	63.6
Fear of result of surgery	207	34.8
Fears related anaesthesia		
Inadequate anaesthesia	341	57.4
Complication of anaesthetic drugs	223	37.5
Fear of not waking up after surgery	156	26.3
Combined or other fears		
Death during surgery	94	15.8
Post operative complications	356	59.9
Fear of unknown origin	304	51.2
Fear of inadequate care	269	45.2



Distribution of patients on various variables as per HADS anxiety score is formulated in table no 2. The incidence of preoperative anxiety in the study was found as 72.6% with average preoperative anxiety score as 12.3 for whole sample. On analysis of factors like gender, age, education and marital status did not showed any significant variation in preoperative anxiety cases. Income was not taken into account because most of the treatment or surgery in government hospital done on free basis, so not considered as factor for preoperative anxiety in our study. Analysis of other factors like history of using or abusing substance like alcohol, opiate nicotine, cannabis were found as having significantly higher chance of being anxious 75.1% as compared with patients who were not using any substance. History of prior surgery was found to be significant protective factor in preoperative anxiety.

The worries, fears or apprehension in definite cases of anxiety (i.e. HADS>10) patients about common issues in population regarding surgery was summarized in table no 3. Harm might be done in surgery was in 63.6% cases while death during surgery like excess blood loss was a concern for 15.8% cases. Inadequate anaesthesia like incomplete unconsciousness, gain of consciousness during operation or over dose of anaesthesia were apprehensions for 57.4% while fear of complication of anaesthetic drugs like prolong unconsciousness, paralysis, loss of memory or loss of voice was in 37.5% patients. 26.3% patients worried that they may not wake up after surgery. 59.9% patients were worried about post operative complications like nausea, vomiting, pain and 45.2% patients having worries poor post operative care by hospital staff and family members.

Discussion

Persons who undergo surgical procedures are under strong preoperative distress13. Substantial anxiety before operation is reported to affect majority of surgical patients in present study. Overall 72.6% participants of present study were found be affected with preoperative anxiety. Previous studies also reported high incidence of preoperative anxiety ranges from 60% to 92% in surgical patients[14]-[19].

The degree to which each patient manifests anxiety related to future experiences depends on many factors that include age, gender, previous surgical experience, and personal susceptibility to stressful situations[20].

The percentage of participants that were found to be anxious in this study was more in females than in males, but this was not statistically significant. Some studies have shown that females experience more preoperative anxiety than males[14, 15, 21-23], whereas other workers found that gender was not a determinant of preoperative anxiety[19, 24-26]. This may be due to sociocultural difference of the places where these studies were carried out. A further multi centric study on this subject is suggested.

The proportion of participants with preoperative anxiety in this study appeared slightly more in younger age, but this was not statistically significant. This was in conformity with results of previous studies19, 24. Some studies revealed reverse trend of preoperative anxiety with age. As age increased, the anxiety frequency decreased2[1,22].

Married participants were more anxious than single or unmarried in preoperative period in present study, but again this was not statistically significant.

Preoperative anxiety seems to have trend of increase with increasing level of education in the present study. However this trend was not significant statistically. This was also observed in results of previous studies[19, 24]. Results of another study 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[23].

Present study shown a statistical significant correlation between preoperative anxiety and history of substance use. Participants with history of substance abuse were more in frequency with preoperative anxiety than participants with no history of substance use.

History of previous surgery seems to be an attenuating factor for preoperative anxiety in present study. Statistically significant lower frequency of patients with preoperative anxiety observed in patients with previous history of surgery in comparison to patients going to be operated for first time. This observation is supported by a similar finding of a study that higher level of anxiety would be noted in patients waiting for surgery for the first time than patients having history of prior surgery[26]. Contrary to this, another study found no significant difference[19].

Psychology of a patients awaiting for a surgical act provokes various emotional and stress reaction, which leads to preoperative anxiety.

Harm during surgery, postoperative complications, inadequate anaesthesia and fear of unknown were the apprehensions for majority of participants in present study. Nearly half of patients were also anxious about postoperative care. Some of the patients were anxious for serious consequences like nearly one third of the patients fearful of not waking up after surgery while a minority of patients were fearful of death during surgery.

The most common reason for anxiety in the majority of patients at Port Harcourt Teaching Hospital, city in southeastern Nigeria, was the possibility of surgery being postponed, followed by fear that mistakes may be made during the surgical operation resulting in harm to the patient, fear of not receiving enough attention from care givers and fear of "not waking up" after surgery. The respondents were least worried about having post-operative nausea and vomiting[24].

In another study at Jimma University Specialized Teaching Hospital in south western Ethiopia the most common factors that make patients to suffer from anxiety were fear of death, fear of unknown origin, financial loss and results of operation[19].

Some of the findings of the above two studies are consistent with the present study. The reason for other inconsistent finding could be due to difference in sociocultural, socio economic and area difference.

Few previous studies differentiated the preoperative fear response according to the gender of participants and noted that change of environment, waiting time of surgery, postoperative pain, concern about family, fear of one's life, nil per mouth, blood transfusion, fear of unknown, harm from doctor/nurse mistake, getting stuck with needles and awareness during surgery were the significant factors responsible for increase pre-operative anxiety in women as compared to males[27], [28].

Unrecognized prolonged preoperative anxiety creates stress which may subsequently harm the patient and delay recovery15, 23, 29, 30. Increased preoperative anxiety is associated with pathophysiological responses such as hypertension and dysrhythmias and may cause patients to refuse planned surgery[20,31].

Preoperative anxiety and depression can also cause reactions that result in an increase in the intraoperative consumption of anaesthetics and in a greater postoperative demand for analgesics[32]. Pain and anxiety are strong predictors of a more difficult postoperative recovery[33]. High level of preoperative anxiety respond worse to analgesic medication[34].

Study done in Pune, India, indicated that patients who were well informed about the surgical procedure in advance had significantly less preoperative anxiety[35]. Communicating information plays a great role in reduction of preoperative anxiety[19].

Strategies to manage anxiety commonly used by the respondents included pharmacological interventions to relieve anxiety and pain and non-pharmacological interventions that involve information, communication, and stress reduction. Although these strategies are useful, they may not effectively reduce anxiety for all patients[16,36], [37].

Conclusion

There is a high prevalence of preoperative anxiety in elective surgical patients. Patients with history of substance abuse are more likely to suffer with preoperative anxiety. The fear of harm during surgery, postoperative complications, inadequate anaesthesia and fear of unknown were the most common apprehensions for majority of participants in present study. Good communication skills of the doctor would reduce preoperative anxiety.

Suggestion

Further studies on this subject involving multi centres to clarify the relationship between preoperative anxiety and gender, age and educational levels in peoperative surgical population.

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