



Preoperative Anxiety in Indian Surgical Patients- Experience of a Single Unit

KEYWORDS

Preoperative anxiety, prevalence, sportspersons, questionnaire, factors.

* DR Suman Saini

Dr Madhu Dayal

D.A, DNB. Address-H.No-43, B-1-B Block, Janakpuri, New Delhi-110058 * Corresponding Author

MD., Address-D4, West Kidwai Nagar New, Delhi, 110029

ABSTRACT BACKGROUND: Preoperative anxiety has been widely prevalent but poorly evaluated in surgical patients. Causative factors have not been studied in Indian population. The objective of this study was to assess prevalence, level and factors responsible for anxiety in the study group using a modified questionnaire.

Methods: This prospective study included 219 ASA I & II patients scheduled for elective surgery in Sports Injury Center. Patients who consented were asked to fill the questionnaire during preoperative visit. The questionnaire included demographic factors and questions related to their fear about anaesthesia.

Statistical Analysis : Data was analysed using Statistical Package for Social Sciences (SPSS) version 21.0. Results were evaluated using Mann-whitney test and Chi-square test.

Result: Overall 58.9% patients were found to be anxious due one or more factors. Mean age was 32.2 ± 12.9 . Females (75.86%) were significantly more anxious than males (56.32%). No significant correlation of anxiety was found with age, level of education and previous anaesthetic exposure. Factors on priority for patient's anxiety were concern of paralysis and disability (40.31%), fear of needles and catheters (39.53%) and fear of postoperative pain (33.33%). Fear of unknown was a concern for 24.03% patients. Most patients presented with mild to moderate fear.

CONCLUSION: Prevalence of anxiety is high among preoperative patients. Females exhibit significantly higher level of anxiety. A modified self designed questionnaire correlating to patient's concern is a reliable assessment tool. Slight differences are observed for some particular questions among patients.

INTRODUCTION

Preoperative anxiety is a challenging issue in patient awaiting surgical procedures. Stress in preoperative patients is widely accepted as an expected response.¹ Anxiety is an unpleasant state of mind secondary to a patient's concern about the disease, hospitalization, anaesthesia, surgery or the unknown.² Preoperative anxiety may be associated with abnormal hemodynamics as a consequence of sympathetic, parasympathetic and endocrine stimulation.³ As per literature, overall incidence of anxiety is around 60-90% in western population and it varies with different surgical groups.^{4,5} Incidence of preoperative anxiety among Indian population is not known yet. This figure may vary with cultural and demographic differences. Assessment of anxiety is important among preoperative patients as level of anxiety and patient's fear can complicate management of anaesthesia and postoperative period.⁶ The degree to which each patient manifests anxiety depends on many factors. These include age, gender, education, type of surgery, previous surgical experience and personal susceptibility to stressful situation.¹

For prevention of preoperative anxiety there is a need to identify the causative factors in our local population to design appropriate management plan for better patient satisfaction. The anaesthesiologist's preoperative visit should also be relevant to patient's concerns to help them cope up with the fear and anxiety in addition to clinical evaluation. Keeping this in mind, present study was conducted in a tertiary care hospital in a group of young Indian patients, mostly sportspersons, who presented to hospital for surgeries related to sports injuries over a specified period. Objective of the study was to find out the incidence, factors responsible for anxiety and the level of anxiety among them.

Material Method

This prospective observational study was carried out in Sports Injury Center of V.M.M.C & Safdarjung Hospital, New Delhi, India, a tertiary level teaching institute from March to May 2015. This is a specialized orthopaedic center of our institute, catering to patients coming for joint replacements and for sports related injuries. After institutional ethics committee approval, 219 consecutive adult patients (age 16-74 yrs) of either sex, who came for elective surgery performed under regional anaesthesia during this period and consented were enrolled. Selected patients belonged to ASA I & II and were able to read and understand English and Hindi (official language of India). Patients with psychiatric illness, language barrier & those who refused to participate were excluded from the study. A simple questionnaire, modified from validated questionnaires was prepared after reviewing bibliography and after expert consultation.^{15,17} First section of questionnaire contained demographic data including name, age, sex, medical registration no, level of education and information about any previous surgical or anaesthetic exposure. Section II contained nine questions addressing various factors causing anxiety during perioperative period. All questions were scored on a 1-5 Likert scale according to the severity of anxiety which can be graded as follows:

1. - No fear
2. - Mild fear
3. - Moderate fear
4. - Strong fear
5. - Extreme fear

Patients were required to select different factors responsible for anxiety and grade them on the scale according to severity of anxiety.

The questionnaire was given to recruited patients an evening before surgery by an anaesthesiologist not involved in the study. Purpose of the study was explained after self introduction and patients were instructed about the use of questionnaire. Informed consent and demographic details were taken thereafter. A standardized time of 10 min was given to fill the proforma without any intervention by anaesthetist or any other person. Patients were assured to maintain confidentiality.

STATISTICAL ANALYSIS

Data was analysed using Statistical Package for Social Sciences (SPSS) version 21.0. Frequency tables were generated for age, gender, level of education and previous exposure to anaesthesia. Categorical variables were presented in number and percentage (%) and continuous variables were presented as mean \pm SD. Quantitative variables were compared using Mann-Whitney test for calculating incidence of anxiety in the study group. Qualitative variables were compared using Chi-square test between the two groups. A p value of <0.05 was considered statistically significant.

RESULTS

A total of 219 patients were recruited in the study. There were 190 (86.76%) males and 29 females (13.2%). Their mean age was 32.2 ± 12.9 . Overall 129 (58.9%) of the patients were anxious about one or other factor listed in Table 1. Among the factors responsible for preoperative anxiety, most common factors were concern of paralysis and disability (40.31%), fear of needles and catheters (39.53%) and fear of postoperative pain (33.33%). Fear of unknown was a concern for 24.03% patients.

Females were significantly more anxious than males as preoperative anxiety being present in 75.86% females in comparison to 56.32% males (P value 0.046). No significant correlation of anxiety was found with increasing age. Neither level of education nor previous anaesthetic exposure affected level of anxiety significantly (Table/Fig 2-5). Level of anxiety for individual factor is depicted in Fig 6 (Bar Diagram).

DISCUSSION

Any surgery, major or minor is a stressful situation. Anxiety in preoperative patients is considered a normal response.⁷ Measurement of this fear has been done by various investigators using different methods. Commonly used questionnaire for this purpose are Spielberg's State-Trait Anxiety Inventory (STAI),⁸ Amsterdam Preoperative Anxiety Information Scale (APAIS),³ Hospital Anxiety and Depression Scale⁹ and visual analog scale (VAS)¹⁰. All these methods have their limitations. STAI is currently considered as a gold standard.^{11,12} However, its usefulness is limited in clinical settings as it is cumbersome and patient needs help to understand it. Moreover, processing of data is complex and slight changes in the severity of anxiety are difficult to assess using this.^{13,14} Keeping this in mind, a short, reliable and easy to complete questionnaire was designed to measure and to evaluate & grade anxiety levels in consultation with previous studies.^{15,16,17} We aimed to measure the incidence of anxiety and to evaluate and grade the factors responsible for anxiety in the study group.

In present study, overall prevalence of anxiety related to any of the mentioned factors was 58.9%. Our result was

similar to the study done by Jafar et al (62%) and Romnaik et al (66%).^{13,14} Mavridou et al and Mattias et al found higher incidence 81% and 76.6% respectively in their studies.^{15,16}

We also observed significantly higher level of anxiety in females. Similar findings were observed by some previous studies^{13,16,17} while other researchers found lack of gender effect.^{3,18} Further study on this subject with larger sample size is suggested. We did not find any statistically significant effect of other demographic factors on preoperative anxiety. Though proportion of anxious patients appeared to increase with increasing level of education and decrease with increasing age. Participants with previous anaesthetic exposure were less anxious than patients coming for surgery for the first time. Our findings were consistent with many previous studies.^{17,19,20} Larger proportion of anxious patients with higher education level may be because of their better awareness about complications related to anaesthesia and surgery. Relatively lesser level of anxiety among patients with prior anaesthetic exposure could be because of less "fear of unknown" or less misconceptions about anaesthesia and surgery.²¹

Preoperative patients feel various kinds of stress. We offered a list of questions to our patients in study group to determine different aspects of fear related to surgical procedure. Among the list of factors responsible for anxiety, we found concern for paralysis and disability as the most common factor (40.31%). Majority of patients had mild to moderate degree of fear. Possible explanation to this fear could be orthopaedic surgery involving lower limb and due to great concern about the outcome of surgery. Majority participants being sportspersons were worried about their career. Unlike our study, fear of complications and result of surgery ranked second and third in a study by Jawaid et al.¹⁷ Fear of needle needles, drains and catheters ranked second in our study (39.53%). Again, most of the anxious patients had mild (18.6%) to moderate (15.5%) degree of fear. Only 3.1% patients feared strongly. This factor was included in questionnaire due to our previous experience of apprehension showed by patients regarding needle; be it an intracath or spinal /epidural needle. This could be due to more number of younger participants in our study group. Unlike our results, fear of injection ranked last in the study done by Jawaid et al¹⁷ and MacClean et al.²² They also found that patient's greatest concern was postoperative pain whereas surprisingly it ranked third in our study (33.33%). This could be due to patients' higher threshold for pain as they were used to get hurt while playing. Nomura et al also reported great apprehension about postoperative pain in patients undergoing orthopaedic surgeries.²³

Some of the fears underlying preoperative anxiety are elusive and the person may not be able to identify the cause.²⁴ Fear of unknown, unfamiliar place and loss of control of situation is one such fear responsible for making preoperative patients anxious. Fear of unknown ranked higher in our study which is inconsistent with the findings in Jawaid's study.¹⁷ This difference could be because of cultural and demographic differences. Postoperative nausea vomiting, concern of infection and personal issues were least concern for our patients. This could be related possibly to regional anaesthesia, faith shown in clinicians and high standard of care provided to patients in our setup.

Higher incidence of anxiety was observed in our study

group despite routine preoperative visit by anaesthetist. This is because, most of the time during anaesthetist's visit only patient's health status and fitness for anaesthesia is assessed without realizing patient's real reason for stress. Determining the level and factors influencing preoperative anxiety and fear in our population may help us in the better management of patients. In addition, provision of adequate information about the disease and treatment options will also help in reducing the level of anxiety.

CONCLUSION

Prevalence of preoperative anxiety was 58.9% in our study. Females were more anxious than males. Most common factors to make patients suffer from fear were fear of paralysis/disability, fear of needles/drains/catheters and postoperative pain. Reliable estimation of the severity of anxiety is essential for perioperative management of patient. Such testing can be easily done with self made questionnaire.

Table/Fig 1: Contribution of various Factors in anxiety

Factors	Frequency	Percentage
CONPD	52	40.31%
FODNC	51	39.53%
POP	43	33.33%
FOU	31	24.03%
Any Other Sources Of Anxiety	12	9.30%
Conc Of Infection	6	4.65%
PONV	5	3.88%
FONWP	4	3.10%
Personal Issues	1	0.78%

Table/Fig 2: Gender and Preoperative Anxiety

Gender	Number	Number of Anxious Patients	P Value
Male	190	107 (56.32%)	0.046
Female	29	22 (75.86%)	
Total	219	129	

Table/Fig 3: Age and Preoperative Anxiety

Age Group (yrs)	Number	Number of Anxious Patients	P Value
16-35	148	91 (61.49%)	0.262
>35	71	38 (53.52%)	
Total	219	129	

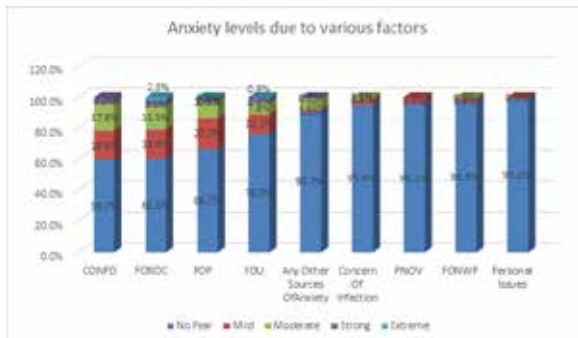
Table/Fig 4: Education Level and Preoperative Anxiety

Education Level	Number	Number of Anxious Patients	P Value
High School	84	48 (57.14 %)	0.594
Graduate	102	58 (56.66 %)	
Post Graduate	27	19 (70.37 %)	
Others (M. phil, PhD)	6	4 (66.67 %)	
Total	219	129	

Table/Fig 5: Previous Anaesthetic Exposure and Preoperative Anxiety

Previous Anaesthetic Exposure	Number	Number of Anxious Patients	P Value
No Exposure	165	99 (60 %)	0.564
Exposure	54	30 (55.56 %)	
Total	219	129	

Table Anxiety levels due to various factor



REFERENCES

1. Badner NH, Neilson WR, Munk S, Kwiatkowska C, Gelb AW. Preoperative anxiety: Detection and contributing factors. *Can J Anaesth* 1990;37:444-447.
2. Ramsay MAE. A Survey of preoperative fear. *Anaesthesia* 1972;27:396-402.
3. Boker A, Brownell L, Donen N. The Amsterdam preoperative anxiety and information scale provides a simple and reliable measure of preoperative anxiety. *Can J Anesth* 2002; 49: 792-8.
4. Perks A, Chakravarti S, Manninen P. Preoperative anxiety in neurosurgical patients. *J Neurosurg Anesthesiol* 2009;21:127-130.
5. Frazier SK, Moser DK, Daley LK, McKinley S, Riegel B, Garvin BJ, An K: Critical care nurses' beliefs about and report management of anxiety. *Am J Crit Care* 2003;12 (1):19-27.
7. Tolsdorf W, Berlin J, Rey ER, Schmidt R, Kollmeier W, Storz W, Ridder T, Schaetzle P. Preoperative stress. Study of the mental behavior and parameters of physiological stress in non premedicated patients during the preoperative period. *Anaesthesist*. 1984;33:212-7.
8. Yilmaz M, Sezer H, Gürlür H, Bekar M: Predictors of preoperative anxiety in surgical inpatients. *J Clin Nurs* 2011, 21(7-8):956-964.
9. Adesanmi A, Afolabi M. Owojuyigbe, Aramide F. Faponle and Femi O. Fatoye. Assessment of preoperative and postoperative anxiety among elective major surgery patients in a tertiary hospital in Nigeria. *M.E.J. Anesth* 2015; 23 (2):235-240.
10. Zigmond AS, Snaith RP. The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica* 1983; 67:361-70.
11. Kindler CH, Herms CH, Amsler F, Ihde Scholl T, Scheidegger D. The visual analogue scale allow effective measurement of preoperative anxiety and detection of patients anesthetic concerns. *Anesth Analg* 2000; 90: 706-12.
12. 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;14:67.
13. Fountoulakis KN, Papadopoulou M, Kleanthous S, Papadopoulou A, Bizeli V, Nimatoudis I, Iacovides A, Kaprinis GS: Reliability and psychometric properties of the Greek translation of the State-Trait Anxiety Inventory form Y: Preliminary data. *Ann Gen Psychiatry* 2006;5(2):1-10.
14. Jafar MF, Khan FA. Frequency of preoperative anxiety in Pakistani surgical patients. *J Pak Med Assoc* 2009;59(6):359-363.
15. Romanik W, Kanski A, Soluch P, Szymanska O, Preoperative anxiety assessed by questionnaires and patient declarations. *Anesthesiology Intensive Therapy* 2009;80-84.
16. Mavridou P, Dimitriou V, Manataki A, Arnaoutoglou E, Papadopoulos G. Patient's anxiety and fear of anesthesia: effect of gender, age, education, and previous experience of anesthesia: A survey of 400 patients. *Journal of Anesthesia* 2013; 27(1): 104-108.15.
17. Matthias AT, Samarasekera DN. Preoperative anxiety in surgical patients – experience of a single unit. *Acta Anaesthesiologica Taiwanica* 2012; 50: 3-6.
18. Jawaid M, Mushtaq A, Mukhtar S, Khan Z. Preoperative anxiety before elective surgery. *Neurosciences* 2007;12(2):145-8.
19. Uddin I, Abdullah K, Tahir J, Rahila I. Pre-operative anxiety in patients admitted for elective surgery in King Saud hospital, Unaizah, Al-Qassim Kingdom of Saudi Arabia. *Pak J Med Sci* 2002; 18: 306-10.

20. Berth H, Petrowski K, Balck F. The Amsterdam Preoperative Anxiety and Information Scale (APAIS) - the first trial of a German version. *Psychosoc Med* 2007;4:Doc01.
21. Sirinan C, Rungreungvanich M, Vijitpavan A, Morkhareonpong C. Pre-anesthetic anxiety assessment: HADS versus APAIS. *Thailand J Anesth* 2000;26:155-63.
22. Moerman N, Vandam FS, Muller MJ, Oosting H. The Amsterdam Pre-operative Anxiety and Information Scale (APAIS). *Anesth Analg* 1996; 82:445-51.
23. McCleane GJ Cooper R. The nature of preoperative anxiety. *Anaesthesia* 1990;45:153-155.
24. Nomura M, Saeki S, Ogawa S, Tai K, Kajiwara K. Preoperative questionnaire survey about anxiety of patients for scheduled operation. *Masui* 2000; 49: 913-9.
25. Roger M, Reich P. Psychological intervention with surgical patients:evaluation outcomes. *Adv Psychosom Med* 1986;15:23-50.