

Assessment of Preoperative Anxiety among Patients Attending a Preanaesthetic Check-up Clinic at a Tertiary Care Hospital, Odisha: A Cross-sectional Study

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ABSTRACT

Introduction: Anxiety during the preoperative period predisposes to postoperative complications such as increase in postoperative pain, delay of healing and prolonged hospital stay. Further, patients with a high level of preoperative anxiety require higher doses of anaesthetic agents and recover poorly. Due to these factors, each tertiary care hospital should have an idea about the prevalence of preoperative anxiety in their setting, so that appropriate preventive measures can be planned.

Aim: To assess the prevalence of preoperative anxiety in patients attending the Preanaesthetic Check-up (PAC) clinic for elective surgeries and to find out the factors associated with anxiety among them.

Materials and Methods: This hospital-based, cross-sectional study was conducted in the PAC Clinic at Kalinga Institute of Medical Sciences (tertiary care hospital), Bhubaneswar, Odisha, India, from May to July 2018. The study included 100 patients, using convenient sampling technique, undergoing preanaesthetic

check-up, before the proposed elective surgeries. A researcher made study tool, using Hamilton-A (HAM-A) scale, for assessing preoperative anxiety was used. Data was analysed using Epi Info software. A p-value <0.05 was considered as statistically significant.

Results: Among the sampled 100 study participants, preoperative anxiety was found to be present in 97, 72 of the study participants had mild anxiety, 14 had mild to moderate and 11 moderate to severe anxiety. Of the 97 participants who had preoperative anxiety, 7 (14.89%) of the females had moderate to severe anxiety as compared to 4 (8%) of males. The age group of 60-69 years and Christianity religion were found to be statistically significant factors associated with anxiety in the study population.

Conclusion: The prevalence of preoperative anxiety among the study participants was found to be high. Preventive measures like counselling sessions to address their apprehensions should be planned to decrease the anxiety.

Keywords: Anaesthetic agents, Elective surgery, Hamilton-A scale

INTRODUCTION

Hospitalisation and surgery are considerable critical life events having a negative effect, often abruptly imposed that may cause considerable stress [1]. Operation and anaesthesia increase the feeling of anxiety [2]. It is a compound phenomenon having different components such as psychological, motor, somatic, vegetative and metabolic. The dimension of the anxiety has an influence on the time of recovery, quantity of complications and the discomfort felt by patients. Various studies report different prevalence of anxiety. An Indian study reported the prevalence of anxiety as 72.6%, whereas a Nigerian study reported the prevalence to be 51% [1,2].

The prevalence of preoperative anxiety varies depending on the place of assessment and the type of scale used. The dimension of anxiety can be measured in many ways; questionnaires being one of the methods of taking an objective measurement. The Hamilton Anxiety Rating Scale (HAM-A), which is a validated scale used for assessing anxiety in patients, is used in the present study. This scale enables the estimation of the efficacy of the preoperative preparing methods and the dynamics of anxiety during the hospitalisation. Monitoring of the anxiety can be very useful in decreasing the fear and improving surgical outcomes related to anaesthesia [3,4].

There is paucity of data related to preoperative anxiety in this part of Odisha. Hence, the present study was planned, to estimate the prevalence of preoperative anxiety and factors that may influence the patient's preoperative anxiety level, so that, appropriate preventive and curative measures can be planned to have better surgical outcomes.

MATERIALS AND METHODS

This hospital-based, cross-sectional study was conducted in the PAC clinic of Department of Anaesthesiology at Kalinga Institute of Medical Sciences (tertiary care hospital), Bhubaneswar, Odisha, India, from May to July 2018. A sample size of 100 was considered, convenient sampling technique was used to recruit participants, which included only the patients attending the PAC clinic on Mondays and Fridays for undergoing elective surgeries and satisfying the inclusion and exclusion criteria. The study was initiated after getting Institutional Ethical Clearance (KIMS/KIIT/IEC/48/2018).

Inclusion criteria: Patients of either sex visiting for PAC, aged 18 years and above, those undergoing General Anaesthesia (GA) or Spinal Anaesthesia (SA) and those who gave written informed consent for participation were included for the study.

Exclusion criteria: Uncooperative patients, those with previously diagnosed anxiety or depression on psychiatric treatment, and the ones in whom bedside PAC was done were excluded from the study.

Study Procedure

It was a researcher-made questionnaire comprising of two sections:

Part A: Socio-demographic and behavioural data was collected as per the World Health Organisation (WHO) STEPS questionnaire (version 3.1) [3].

Part B: Hamilton Anxiety Rating Scale (HAM-A) [4].

The second part of the questionnaire (Part B) used in the present study constituted of the HAM-A to assess the anxiety status of the

study participants when they went for PAC. The scale consists of 14 items, each defined by a series of symptoms, and measures both psychic anxiety (mental agitation and psychological distress) and somatic anxiety (physical complaints related to anxiety).

Each item is scored on a scale of 0 (not present) to 4 (severe), with a total score range of 0-56, where:

- <17: mild severity,
- 18-24: mild to moderate severity
- 25-30: moderate to severe anxiety

The study tool was validated by three subject experts. Each study participant was explained about the purpose of the study and a written informed consent was obtained from each one of them. Those patients, in whom moderate to severe anxiety was diagnosed appropriate management was done before the proposed surgery.

WHO STEPS Surveillance manual [5]:

Operational definitions used in the study:

Tobacco users:

- Current tobacco users: Percentage of daily and current (daily plus non daily) tobacco users, includes smoking and smokeless, among all respondents.
- Former daily smokers and former smokers: Percentage of former daily smokers among all respondents and among ever daily smokers, and the mean duration, in years, since former smokers quit smoking.

Alcohol consumption:

- Current users: Those who have drunk alcohol in the past 30 days.
- Past users: Those respondents who have past 12 months abstainers.

Employment status: Proportion of respondents in paid employment and those who are unpaid. Unpaid includes persons who are non paid, students, homemakers, retired and those who are unemployed.

Literate and illiterate: As per census, a person aged seven and above who can both read and write with understanding in any language, is treated as literate. A person, who can only read but cannot write, is not literate. A person who can neither read, nor write in any language is considered as illiterate [6].

STATISTICAL ANALYSIS

The collected data was coded and entered in MS Excel and analysed using Epi Info TM software version 7.2.4.0. Descriptive statistics was used to represent the results as frequencies, percentages and means. Between groups percentages was compared with Chi-square for observed differences. A p-value less than 0.05 were considered to be significant in the present study.

RESULTS

The present study was carried among 100 patients attending the PAC clinic for preanaesthetic evaluation, regarding fitness for surgery. In the present study 52 participants were males and 48 were females. The mean age of the study participants was 52.76±17.41 years. Overall, 28 participants were in the age group of 45-59 years. On assessing the anxiety status, using the HAM-A scale while undergoing PAC, it was found that 97 patients had some anxiety; 72 had mild anxiety, 14 had mild to moderate severity, 11 moderate to severe anxiety, whereas three had no anxiety (belong to age group: 18-29 years). Among those with mild anxiety, majority (23%) were in the age group of 45-59 years, while 35.7% of those with mild to moderate anxiety were in the age group of 60-69 years [Table/Fig-1].

Overall, 15 (57.7%) of those in the age group of 60-69 years had mild anxiety and this was also found to be statistically significant (p-value=0.04). It was also seen that the females reported a higher prevalence of anxiety. Mild anxiety was seen in 30 (63.82%),

Variables	Mild (n=72)	Mild to moderate (n=14)	Moderate to severe (n=11)	p-value
Age group (in years)				
18-29 (n=14)	13 (92.86%)	0	1 (7.14%)	0.19
30-44 (n=11)	8 (72.73%)	2 (18.18%)	1 (9.09%)	0.91
45-59 (n=28)	23 (82.14%)	4 (14.29%)	1(3.57%)	0.29
60-69 (n=26)	15 (57.69%)	5 (19.23%)	6 (23.08%)	0.04
>70 (n=18)	13 (72.22%)	3 (16.57%)	2 (11.11%)	0.956
Mean age (years)	53.23±17.05			
Gender				
Male (n=50)	42 (84%)	4 (8%)	4 (8%)	0.07
Female (n=47)	30 (63.82%)	10 (21.29%)	7 (14.89%)	
Religion				
Hindu (n=92)	69 (75%)	12 (13.04%)	11 (11.96%)	0.21
Muslim (n=1)	1 (100%)	0	0	0.84
Christian (n=3)	1 (33.33%)	2 (66.67%)	0	0.0317
Sikh (n=1)	1 (100%)	0	0	0.8395
Educational status				
Illiterate (n=10)	7 (70%)	1 (10%)	2 (20%)	0.6313
Literate (n=87)	65 (74.71%)	13 (14.95%)	9 (10.34%)	
Employment status				
Employed (n=91)	67 (73.63%)	13 (14.29%)	11 (12.08%)	0.6637
Unemployed (n=6)	5 (83.33%)	1 (16.67%)	0	
Marital status*				
With a partner (n=75)	56 (74.67%)	11 (14.67%)	8 (10.66%)	0.9277
Without a partner (n=22)	16 (72.73%)	3 (13.64%)	3 (13.63%)	

[Table/Fig-1]: Socio-demographic characteristics of the participants with anxiety (n=97).

*Marital status- With a partner depicts all married participants who were currently married and were staying with their partner and without a partner depicts all the study participants who were either divorced, separated or widowed.

moderate to severe anxiety was found in 10 (21.28%) where as severe anxiety was found in 7 (14.89%) of females. Among the Christians 2 (66.67%) had mild to moderate anxiety which was found to be statistically significant (p-value=0.03). [Table/Fig-2]

Behavioural risk factors	Mild (n=72)	Mild to moderate (n=14)	Moderate to severe (n=11)	p-value
Tobacco use*				
Current Tobacco users (n=36)	30 (83.33%)	2 (5.56%)	4 (11.11%)	0.1518
Former tobacco users (n=32)	24 (75%)	3 (9.38)	5 (15.62%)	0.4449
Alcohol use†				
Current users (n=27)	23 (85.19%)	1 (3.70%)	3 (11.11%)	0.1661
Past users (n=27)	23 (85.19%)	1 (3.70%)	3 (11.11%)	0.1661
Co-morbid conditions‡				
Hypertension (n=28)	18 (64.29%)	6 (21.43%)	4 (14.28%)	0.3396
Diabetes (n=29)	19 (65.52%)	5 (17.24%)	5 (17.24%)	0.3829
Hypercholesteremia (n=10)	7 (70%)	2 (20%)	1 (10%)	0.8694
Cardiovascular diseases (n=3)	2 (66.67)	0	1 (33.33%)	0.5177
History of usage of OCP (n=3)§	2 (66.67)	1 (33.33%)	0	0.5655

[Table/Fig-2]: Behavioural risk factors among study participants and their association with preoperative anxiety (N=97).

*Tobacco use- As per the operational definition the use of tobacco has been divided into two groups namely, current users and former users [5].

†Alcohol use- As per the operational definition the consumption of alcohol was divided into two groups for analysis purpose namely, current users and past users [5].

‡Co-morbidities- Out of the 100 study participants 70% reported of having atleast any one of the co-morbidities like diabetes, hypertension, hypercholesteremia and/or cardiovascular diseases.

§n=Out of number of 48 females who participated in the study around 3 (6.25%) consumed Oral contraceptive pills (OCPs) at the time of interview

represents the behavioural risk factors among study participants and their association with preoperative anxiety.

DISCUSSION

The present study was conducted among the patients planned for elective surgery in a tertiary care hospital. The prevalence of preoperative anxiety was found to be 97%. The prevalence of mild anxiety was 72% whereas 14% of the study participants had mild to moderate severity and 11% moderate to severe anxiety, 3% had no anxiety. The HAM-A was used in the present study to assess the preoperative anxiety of the study participants. A similar study done in Odisha, using the HAM-A and Hamilton Depression Rating Scale, reported the prevalence of anxiety as 43.3% and depression among 38% of the study participants [7]. These differences might be due to differences in sample size. Another similar study done in Tamil Nadu using the Amsterdam Preoperative Anxiety and Information Scale (APAIS) reported the prevalence of preoperative anxiety as 58.1% in patients undergoing day care surgeries [8]. The lower prevalence of preoperative anxiety might be due to the reason that daycare surgical procedures are usually short with less complications and shorter hospital stay, amounting to lesser anxiety level as compared to major elective surgeries, where patients are exposed to longer procedures with longer hospital stay. The difference in the findings might also be due to the difference in the scales used.

A study done in Delhi among patients undergoing valvular heart surgery at a tertiary care hospital using HAM-A scale; reported that around 81.66% of the patients had moderate anxiety [9]. This finding is higher than the finding of the current study. There was significant association of preoperative anxiety with the sleep quality and female gender in the discussed study whereas the present study indicates a statistically significant association between the age group of (60-69 years) and religion (Christianity); although there was a higher prevalence of preoperative anxiety among females in the current study, but it was not found to be statistically significant (p -value=0.07). The reason for higher prevalence of preoperative anxiety among females has been linked to the poor sleep quality in the former study.

A study done in China, to assess anxiety among patients with essential tremors, using the HAM 24-item scale reported the prevalence of anxiety to be 63.3%. It also reported a significant association of preoperative anxiety with female gender [10]. The prevalence of higher anxiety among females is similar to the finding of the present study; however, in the present study this difference was not found to be statistically significant. Another study done in Ethiopia, among adult surgical patients, reported the prevalence of preoperative anxiety as 61% among the study participants, using the State Trait Anxiety Inventory Scale (STRAI scale) [11]. Another similar study done in Brazil among geriatric population undergoing transvesical prostatectomy, using HAM-A reported that 10.9% of the participants showed no anxiety, 40.6% had mild, 31.2% moderate and 17.9% had intense anxiety [12].

The present study reported a lower percentage of study population with severe anxiety. Another Brazilian study done among hospitalised surgical patients, reported the prevalence of preoperative anxiety as 53.0%, and the prevalence of moderate and severe anxiety was 33% among the anxious patients [13]. Another similar study done in Brazil using the Hospital Anxiety and Depression Scale (HADS), it was found that there was statistically significant association between gender where females reported higher anxiety levels and higher age groups were found to have lower anxiety levels [14]. This might be due to the fact that older age group in the above study might be having more co-morbidities resulting in frequent or prolonged hospitalisation leading to subsequent decrease of anxiety

in a hospital environment. The result of the present study is partly similar with the above study with respect to association with gender. A study done in Pakistan using the Hamilton-A scale reported that around 2.9% of the study participants had no anxiety, 30.0% had mild anxiety, 42.9% had moderate anxiety, 12.9% had severe anxiety and 11.4% had very severe anxiety [15]. These findings are similar to the findings of the present study.

Screening of preoperative anxiety might be included as a routine evaluation during the PAC in the present Institution. More studies based on targeted interventions should be taken up in order to achieve lower levels of preoperative anxiety so that the adverse reactions due to anxiety may be avoided. A pre-post study with 'counselling' as intervention, will further help in generating evidence on effectiveness and role of 'patient-centric counselling', in dealing with preoperative anxiety.

Limitation(s)

Due to inherent cross-sectional nature of the study design, causality cannot be ascertained. Hamilton-A scale based on self-reporting may have issues of reporting bias.

CONCLUSION(S)

The prevalence of anxiety ranges from low to high as reported in many studies but the preoperative anxiety in this study was found to be high. Early screening and prompt intervention as a regular practice by the anaesthetists, may help in decreasing the fear of surgery and eliminating preoperative anxiety. This might help in decreasing the complications during and after surgery. A brief idea about the type of surgery the patient is about to undergo, the length of the surgery, the risks and benefits of the surgery, might help in relieving the anxiety preoperatively.

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