Assessment of Preoperative Anxiety And The Risk Factors In Patients Booked For Major Elective General Surgical Procedures With Amsterdam Preoperative Anxiety Scale

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ABSTRACT

Objective	*To determine the frequency of preoperative anxiety and its risk factors in patients scheduled for elective surgery by using Amsterdam Preoperative Anxiety Scale (APAIS).*
Study design	*Analytical cross sectional study.*
Place & Duration of study	*Department of Anesthesiology, Jinnah Postgraduate Medical Centre (JPMC), from January 2022 to June 2022.*
Methodology	*Patients booked for elective surgical operation, of ASA class 1-3, were included. Patients taking any anxiolytics drugs were excluded. APAIS was used to assess the anxiety level. Pearson's correlation, Cronbach alpha and Kruskal Wallis test were applied to the data set. A p-value of <0.05 was taken as statistically significant.*
Results	*A total of 120 patients, 72 (60%) females and 48 (40%) males, were included. Mean age of the patients was 46.40±1.27 years. The sum of anesthesia related anxiety (sum A) was 3.15+1.36 and surgery related anxiety (sum S) was 3.23+1.30. The sum of desire to get information (ID) was 3.30+1.24. Overall Cronbach alpha was 0.94. Anxiety was more frequent among female patients (p=0.00). However, anxiety was less in patients who had a previous history of surgery (p<0.01).*
Conclusion	*Preoperative anxiety had a significant relationship with the female gender. Patients were desirous to receive more information about the anesthetist, the mode of anesthesia and whether they would experience pain during surgery and in postoperative period.*

Key words *Anxiety, Elective surgery, Preoperative anxiety, Amsterdam Preoperative Anxiety Scale, APAIS.*

INTRODUCTION:

Anxiety is a feeling of being uneasy that can affect the hemodynamic stability of the patients. Preoperative anxiety and stress are commonly observed in patients who are scheduled for the surgery. Patients with heightened anxiety and stress in preoperative period require high dose of anesthetic drugs. This may result in perioperative tachycardia and hypotension which may affect postoperative outcome including hospital stay.[1] According to the literature about half of the patients on elective surgical list have anxiety preoperatively.[2] The prevalence of preoperative anxiety varied between 62% to 97% in different studies.[3]

Factors mainly responsible for preoperative anxiety include smoking, known mental disorders, fear of

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postoperative pain and outcome of the surgical procedure.[4,5] Anxiety may be less in patients who had a better level of understanding, with higher education level. Hospital environment and the attitude of healthcare workers are also considered important factors.[6,7] Different methods are used to measure the anxiety level. This include assessment of urinary catecholamine and plasma cortisol levels as well as by measuring heart rate and blood pressure.[4] The preoperative anxiety can be assessed with different tools. Amsterdam Preoperative Anxiety and Information Scale (APAIS) is an accepted validated tool that is translated into different languages for the assessment of anxiety level.[4]

The assessment of anxiety is important as anxious patients may respond differently to the anesthetic and analgesics drugs. The level of anxiety also adversely affects the recovery from anesthesia and influences postoperative outcome.[8] This study was conducted to evaluate the frequency of preoperative anxiety level in patients on general surgery elective operation list along with the factors that cause stress. This identify patients who may require a different approach for anesthesia. This in turn help improve postoperative recovery and surgical outcome.

METHODOLOGY:

This cross sectional study was conducted in the Department of Anesthesiology, Jinnah Postgraduate Medical Centre Karachi, from January 2022 to June 2022. The study was approved by the institution review board. Sample size was estimated with WHO sample size calculator by taking power of study as 80% and level of significance at 5% which came out to be 120.[4] A non-probability consecutive sampling technique was used. Inclusion criteria were patients between 18 years to 70 years of age, both gender, on elective operation list. Patients of ASA class 1-3 were enrolled. Participants on any anxiolytic drugs, with pregnancy, mental disorders and drug addicts, were excluded. Participants who could not read and understand the questionnaire were also not recruited. Informed consent was taken after explaining the purpose of the study.

The APAIS was self-translated into Urdu so that study participants could easily understand the statements if needed. The data collected from APAIS questionnaire were divided into three groups for analysis. It included anesthesia related anxiety score (sum A), surgery related anxiety score (sum S) and desire of patients to get more information (sum ID). The collected data were analyzed in SPSS version 22.0. Gender, marital status, education level and other qualitative variables were measured as frequency with percentages. APAIS score and age were measured as mean+SD. The Pearson's correlation, Cronbach alpha and Kruskal Wallis test were used to compare preoperative anxiety scores against education level, gender and other variables. A P value < 0.05 was taken as significant.

RESULTS:

A total of 120 patients who were scheduled for general surgery procedure on elective operation list were included. There were 72 (60%) females and 48 (40%) males. Mean age of patients was 46.40±1.27 years. Most (n=71 - 59.2%) of the patients were between 41-60 years of age. Ten (8.3%) patients belonged to upper socioeconomic class. Details are given in table I.

The anxiety was found in 81 (67.5%) patients. The sum of anesthesia related anxiety (sum A) was 3.15+1.36, surgery related anxiety (sum S) of 3.23+1.30 and information desire (ID) 3.30+1.24. The overall Cronbach alpha was 0.94 which showed consistency in the items of APAIS. Cronbach alpha in anesthesia related anxiety was 0.88, for surgery related anxiety 0.86, and desire to get information about anesthetist and procedure was 0.90. Anxiety was more frequent in females (p= 0.00). However, anxiety had no relation to socioeconomic status and education status. Details are given in table II.

DISCUSSION:

This study addressed an important subject that relates to the field of anesthesiology and surgery. It identified important variables related to the anxiety which are known to occur in patients waiting for the surgery.[9] The preoperative anxiety is not routinely checked and monitored in surgical patients. It affects the process of induction of anesthesia and its maintenance as well as postoperative outcome. Increased dose of drugs during anesthesia increase the morbidity and mortality.[10,11] Assessment and quantification of anxiety is quite difficult, like pain perception may vary among patients. However, its importance cannot be undermined.

Among different questionnaire available for the assessment of preoperative anxiety, APAIS was found as one of the reliable scales.[12] APAIS has enough psychometric characteristics and is a validated tool. This scale was therefore selected for this study. We, for the purpose of assessment, divided it into three parts. The frequency of anxiety in this study was 67.5% as APAIS score was >11. A similar rate of anxiety of 76.7% was reported in another study.[4] The meta-analysis by Abate et al reported that the prevalence of anxiety globally was 48%, while preoperative anxiety in African patients

Table I: Demographics of the Patients

Variable		n %
Age (years)		46.40 ± 1.27
Gender	Male	48 (40%)
	Female	72 (60%)
Marital status	Single	15 (12.5%)
	Married	105 (87.5%)
Group wise age distribution (years)	18 – 40	37 (30.8%)
	41 – 60	71 (59.2%)
	61 – 80	12 (10%)
Socioeconomic status	Upper class	10 (8.3%)
	Middle class	53 (44.2%)
	Poor class	57 (47.5%)
Education status	Under 10th grade	78 (65%)
	Above 10th grade	42 (35%)
Previous history of surgery	Yes	37(30.8%)
	No	83 (69.2%)

Table II: Correlation of Variables

Variable	P value
Gender	0.00*
Previous History of Surgery	0.01*
Education status	0.9
Marital status	0.7
Socioeconomic status	0.7

*Significant

was 56% and in Asians patients 54%.[13] A study from Pakistan reported a figure of 62%.[14] Almost similar results are found in other studies.[15] In our study the information desire when compared with the preoperative anxiety showed a positive correlation. This means that patients were more desirous to get information about the type of anesthesia and surgical procedure. This is similar to other reports.[4]

In our study anxiety was predominantly present in females with no previous history of surgery. Celik et al in their study noted that females had more anxiety than males.[11] Mavridou et al also reported similar gender based difference.[15]. According to Weinstock et al the prevalence of preoperative anxiety in females is due to fluctuation of estrogen and progesterone levels.[16] Kunthonluxamee et al reported in their study that preoperative anxiety was predominantly found in those patients who were undergoing surgery for the first time as compared to those who had previous surgical procedure.[17] We also observed the same findings. This was a significant variable in our study.

In our study Cronbach alpha showed an internal consistency with a value 0.93 in overall components. A study by Jovanovic et al showed similar results with Cronbach alpha of 0.787.[12] Vergara-Romero etal reported a Cronbach alpha value of 0.84 which is consistent wotj our results.[18]

CONCLUSION:

Preoperative anxiety was more prevalent in females and those patients who were experiencing surgery for the first time in their life. Patients were more desirous of getting information about anesthesia and the surgical procedure. Preoperative counseling with the patients thus can play a significant role in alleviating anxiety.

REFERENCES:

1. Koshy P, Mariyam S, Ipe S, Mathew A, Ramasami P. The role of demystifying anaesthesia in allaying anxiety and improving post-operative patient satisfaction in a tertiary care centre: A randomised control trial. Indian J Clin Anaesth. 2020;7:272-8.

2. Barkhori A, Pakmanesh H, Sadeghifar A, Hojati A, Hashemian M. Preoperative anxiety among Iranian adult patients undergoing elective surgeries in educational hospitals. J Educ Health Promot. 2021;10. https://doi.org/10.4103/jehp.jehp_815_20

3. Khalili N, Karvandian K, Ardebili HE, Eftekhar N, Nabavian O. Predictive factors of preoperative anxiety in the anesthesia clinic: A survey of 231 surgical candidates. Arch Anesth Crit Care.2019;5:21-34.

4. Matthias AT, Samarasekera DN. Preoperative anxiety in surgical patients – Experience of a single unit. Acta Anaesthesiol Taiwan. 2012;50:3-6.

5. Mosadeghrad AM, Esfahani P, Nikafshar M. Hospitals' efficiency in Iran: A systematic review and meta-analysis of two decades of research.J Payavard Salamat. 2017;11:318-31.

6. Zeb A, Hammad AM, Baig R, Rahman S. Pre-Operative anxiety in patients at tertiary care hospital, Peshawar. Pakistan J Clin Trials Res. 2019;2:76-80.

7. Kuzminskaitë V, Kaklauskaitë J, Petkevièiûtë J. Incidence and features of preoperative anxiety in patients undergoing elective non-cardiac surgery. Acta medica Lituanica. 2019;26:93-100. https://doi.org/10.6001/actamedica.v26i1.3961

8. Kil HK, Kim WO, Chung WY, Kim GH, Seo H, Hong JY. Preoperative anxiety and pain sensitivity are independent predictors of propofol and sevoflurane requirements in general anaesthesia.Br J Anaesth. 2012;108:119-25.

9. Jafar MF, Khan FA. Frequency of preoperative anxiety in Pakistani surgical patients. J Pak Med Assoc. 2009;59:359-63.

10. Vadhanan P, Tripaty DK, Balakrishnan K. Pre-operative anxiety amongst patients in a tertiary care hospital in India-a prevalence study. J Soc Anesthesiol Nepal. 2017;4:5-10.

11. Celik F, Edipoglu IS. Evaluation of preoperative anxiety and fear of anesthesia using APAIS score. Eur J Med Res. 2018;23:41. https://doi.org/10.1186/s40001-018-0339-4

12. Jovanovic K, Kalezic N, Sipetic Grujicic S, Zivaljevic V, Jovanovic M, Savic M, et al. Translation and validation of the Amsterdam preoperative anxiety and information scale (APAIS) in Serbia. Brain Behav. 2022;12:e2462. https://doi.org/10.1002/brb3.2462

13. Abate SM, Chekol YA, Basu B. Global prevalence and determinants of preoperative anxiety among surgical patients: A systematic review and meta-analysis. Int J Surg. 2020;25:6-16.

14. 14 Maheshwari D, Ismail S. Preoperative anxiety in patients selecting either general or regional anesthesia for elective cesarean section. J Anaesthesiol Clin Pharmacol. 2015;31:196-200.

15. 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. J Anesth. 2013;27:104-8.

16. Weinstock LS. Gender differences in the presentation and management of social anxiety disorder. J Clin Psychiatry. 1999;60:9-13.

17. Kunthonluxamee A, Pitimana-aree S, Laurujisawat P. Validity and reliability of the Amsterdam Preoperative Anxiety and Information Scale (APAIS); Thai version in adult Thai pre-operative patients. J Psychiatr Assoc Thai. 2009;54:83-92.

18. Vergara-Romero M, Morales-Asencio JM, Morales-Fernández A, Canca-Sanchez JC, Rivas-Ruiz F, Reinaldo-Lapuerta JA. Validation of the Spanish version of the Amsterdam preoperative anxiety and information scale (APAIS). Health Qual. Life Outco. 2017;15:120. https://doi.org/10.1186/s12955-017-0695-8

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