

Preoperative anxiety before elective surgery

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ABSTRACT

Objective: To ascertain the preoperative anxiety level and different factors responsible in patients admitted for an elective surgical procedure in a tertiary care public hospital.

Methods: Anxiety levels were measured in admitted patients of the Civil Hospital, Karachi, Pakistan awaiting elective surgery from October to January 2006. In the afternoon preceding surgery, patients were asked to complete 2 visual analogue scales (VAS) regarding anxiety about the proposed surgery and anesthesia (range, 0 = 'not anxious at all' to 100 = 'extremely anxious'). They were then asked to select different factors responsible for their anxiety from a list.

Results: Mean anxiety score for surgery was 57.65 ± 25.1 and for anesthesia was 38.14 ± 26.05 . There was a statistically significant high level of pre-operative anxiety in females as compared to males ($p < 0.01$). The most common factors contributing to anxiety were concern about family in 173 (89.6%) patients, fear of complications in 168 (87%), results of operation in 159 (82.4%), and postoperative pain in 152 (78.8%). Fifty-six percent of patients thought that their anxiety would be lessened by a detailed explanation regarding the operation and anesthesia.

Conclusion: Our patients experience very high levels of preoperative anxiety. This can be easily measured in the preoperative period and allows detection of patients with high anxiety, encouraging appropriate steps to ameliorate this. Establishment of preoperative counseling clinics and properly informed consent taken before surgery will help in reducing preoperative anxiety.

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Preoperative anxiety is a challenging concept in the preoperative care of patients. Most patients awaiting elective surgery experience anxiety and it is widely accepted as an expected response.¹ Anxiety is described as an unpleasant state of uneasiness or tension, which may be associated with abnormal hemodynamics as a consequence of sympathetic, parasympathetic, and endocrine stimulation. It begins as soon as the surgical procedure is planned and increases to maximal intensity at the moment of entering the hospital.² Patients may perceive the day of surgery as the biggest and the most threatening day in their lives. The degree to which each patient manifests anxiety related to future experiences depends on many factors. These include age, gender, type and extent of the proposed surgery, previous surgical experience, and personal susceptibility to stressful situations.¹ Some degree of anxiety is a natural reaction to the unpredictable and potentially threatening circumstances typical of the preoperative period, especially for the patient's first few surgical experiences. Studies have shown that high preoperative anxiety levels can lead to increased postoperative analgesic requirement, prolonged hospital stay,³ significant contribution to adverse perioperative outcome and poor patient satisfaction.⁴ Interventions to reduce preoperative anxiety include pharmacological therapy,⁵ provision of information,⁶ distraction, attention focusing, and relaxation procedures.⁷ Subjective assessment of preoperative anxiety is found to be inaccurate as both anesthetists and surgeons overestimate their patients' anxiety.⁸ Objectively, preoperative anxiety may be evaluated by different methods. We used the visual analogue scale (VAS) because it is a simple, short, quick and easy test to explain to the patients as well as reliable for the measurement of preoperative anxiety.^{9,10} The aim of the present study was to assess the preoperative anxiety level before elective surgery in a public tertiary care teaching hospital and to find out different factors responsible for their anxiety.

Methods. Patients scheduled for elective surgery under general or spinal anesthesia participated in the study. It was conducted from October 2005 to January 2006 in the Civil Hospital, Karachi, Pakistan, which is a 1500-bed tertiary care public hospital. It is an undergraduate and postgraduate teaching and training center. Inclusion criteria were patients age >18 years, American Society of Anesthesiology (ASA)

Physical Status I, II and ability to give informed consent. All the patients selected for the study had a pre-anesthetic consultation by an anesthetist not involved in the study. On the afternoon prior to surgery patients were asked to complete 2 VAS regarding anxiety about the proposed surgery and the anesthesia (range, 0 = 'not anxious at all' to 100 = 'extremely anxious'). They were then asked to select different factors responsible for their anxiety from a list.

Data were analyzed by using SPSS version-10 and Student t test was used to determine differences in VAS scores in the different groups.

Results. One hundred and ninety-three patients (109 males and 84 females) were interviewed. The demographic data of all patients are shown in Table 1 and type of surgical procedures in Table 2. The mean score of VAS for surgery was 57.65 ± 25.1 and for anesthesia was 38.14 ± 26.05 . Patients feared surgery significantly more than anesthesia ($p < 0.05$). Females had a statistically significant higher level of anxiety as compared to males (Table 3). The ASA physical status and previous surgical experience did not affect significantly on anxiety level. However, type of anesthesia did influence, and patients who were waiting for surgery under general anesthesia were more anxious (Table 4). Observing different factors responsible for pre-operative anxiety showed that the most common factors were concern about family in 173 (89.6%) patients, fear of complications in 168 (87%), results of operation in 159 (82.4%) and postoperative pain in 152 (78.8%). Only 74 (38.3%) patients were anxious because of awareness during surgery (Table 5). Sixty-two (32.1%) patients said that all the details of surgery had been explained to them. One hundred and eight (56%) patients thought that their anxiety would be less if they were provided with detailed information regarding the operation and anesthesia.

Discussion. For many patients surgery is a life event of dramatic significance, which disrupts their personal, professional, and economic lives, besides having physical effects. The patient enters the

Table 1 - Demographic data of studied patients.

Variable	Value
Age (mean \pm SD)	39.25 \pm 13.82
Gender (M:F)	109:84
ASA status (I/II)	127/66
Previous surgery (yes/no)	55/138
Type of anesthesia (general/spinal)	129/64

ASA - American Society of Anesthesiology

Table 2 - Frequency distribution of type of surgical procedure.

Surgery	No.	(%)
Hernia	61	31.8
Hepato-biliary	50	26.0
Gastrointestinal	27	14.0
Breast	19	9.9
Ano-rectal region	15	7.8
Testicular and scrotal	11	5.7
Thyroid	9	4.7

Table 3 - Anxiety score (VAS) for surgery and anesthesia.

Anxiety	All patients	Male	Female
Anxiety about surgery	57.65 \pm 25.51*	48.55 \pm 24.64*	69.46 \pm 21.56*†
Anxiety about anesthesia	38.14 \pm 26.05	28.78 \pm 24.14	50.29 \pm 23.40†

Values are mean \pm SD, *paired student's t-test comparing VAS anxiety about surgery with VAS anxiety about anesthesia with each group ($p < 0.001$), †unpaired student's t-test comparing scores between male and female patients, ($p < 0.001$), VAS - visual analogue scale

Table 4 - Patient visual analogue scores.

Factor	No.	Surgery VAS	Anesthesia VAS
<i>ASA status</i>			
Class I	127	55.69 \pm 24.98	36.36 \pm 25.35
Class II	66	61.42 \pm 26.27	41.56 \pm 27.23
<i>Previous Surgery</i>			
Yes	55	58.47 \pm 28.02	41.29 \pm 29.43
No	138	57.33 \pm 24.53	36.88 \pm 24.58
<i>Type of Anesthesia</i>			
General	129	64.15 \pm 23.08*	44.19 \pm 25.66*
Spinal	64	44.56 \pm 25.30	25.94 \pm 22.45

Values are mean \pm SD, *Unpaired student's t test was used to determine significant differences in VAS score between 2 groups ($p < 0.001$), ASA - American Society of Anesthesiology

Table 5 - Preoperative anxiety factors.

Factors	No.	(%)
Concern about family	173	(89.6)
Fear of complications	168	(87.0)
Results of operation	159	(82.4)
Postoperative pain	152	(78.8)
Fear of physical disability	145	(75.1)
Financial loss	127	(65.8)
Waiting for operation	104	(53.9)
Fear of one's life	103	(53.4)
Harm from doctor/nurse mistake	100	(51.8)
Change of environment	98	(50.8)
Nil per mouth	97	(50.3)
Needing blood transfusion	90	(46.6)
Fear of unknown	86	(44.6)
Getting stuck with needle	79	(41.1)
Awareness during surgery	74	(38.3)

operation room with fear and anxiety. The findings of this study showed that most of the patients awaiting elective surgery experienced high levels of preoperative anxiety. Patients feared surgery significantly more than anesthesia. Kindler et al¹⁰ reported a pre-operative anxiety score of 33 millimeter (mm) for surgery and 29 mm for anesthesia by VAS.

There are several risk factors for preoperative anxiety. These include history of cancer, psychiatric disorders, self-perception, depression, trait-anxiety level, pain, history of smoking, extent of the proposed surgery, female gender, level of education, and physical status according to ASA.¹¹ Our study observed significantly higher levels of anxiety in females. Similar finding have also been reported in the literature,¹² while some other investigators demonstrated the lack of gender effect.^{6,13} Patients who had previous surgical experience would be less anxious than patients waiting for surgery for the first time. Contrary to this, in our study no significant difference was noted. However, patients awaiting surgery under general anesthesia were significantly more anxious as compared to spinal anesthesia.

One of the aims of pre-anesthetic assessment is to reduce fear and anxiety. Pre-anesthetic assessment before surgery reduces pre-operative anxiety.^{2,14} Although all our patients had their pre-anesthetic visits, still their anxiety level was very high. It was so, because only the clinical status of patients and their fitness in relation to anesthesia were assessed in the clinic, and nothing was carried out to relieve their anxiety about the procedure. This shows that the quality and content of the preoperative visit are as important as its occurrence.

One important finding observed during the study is that some patients score their anxiety to be 0 while some patients are at the other extreme at 100. The patient who scored 0 stated that being Muslim they have faith in God, and they were absolutely not worried about surgery or anesthesia. This is an extremely important finding. Those who were extremely anxious were so because after being scheduled for elective surgery, the patients were neither fully aware of the peri-operative surroundings nor were they properly informed, which is the case in our setup.¹⁵ Standard informed consent practice is very important in answering the queries of the patients, relieving anxiety and better preparing them for the procedure. Kiyohara et al⁶ showed that patients who have information regarding the surgical procedure they will undergo, have lower anxiety levels.

Only 32.1% of our patients knew all the details of surgery preoperatively. Although we did not inquire about the extent of details patients expect to reduce their anxiety, however, 56% of our patients said that their anxiety would be lessened if the procedure was explained to them in detail. A study from Saudi Arabia

showed that 38% of patients were not aware of all the surgical details.¹⁶ In a study from the UK, 82% of patients who underwent surgery had expressed their desire to know more about the procedure prior to surgery, and the most desired information was the estimated length of hospital stay.¹⁷ In a study conducted in the United States, anxiety in the preoperative period was reduced by information about procedures.¹⁸ In a Danish study, patients asked more about pain, anesthesia duration, and risk of impairment of daily activities.¹⁹ Interestingly, a recent study of Lebanese patients failed to support the finding that information reduced preoperative anxiety. It concluded that patient education should not be initiated before assessing the patient's cultural and social background.²⁰

Preoperative anxiety is related to fear of the unknown, unfamiliar place, loss of control of situation, and fear of death. To determine the different aspects of preoperative anxiety, patients were offered a list of different causes. Interestingly, being a very family oriented local setup, where the joint family system is still intact to a great extent, and where family values are quite important, concern about family was the patient's greatest concern followed by fear of complications. Kindler et al¹⁰ showed that the patient's greatest concern was waiting for the procedure, while in our study it ranked seventh. Interestingly, awareness during surgery was the least concern for our patients. A study of the most common preoperative fears surrounding surgery in patients preoperatively, and after their operation regarding the same fears if they required another operation showed interesting findings.²¹ Postoperative pain (65% before operation, 50% after), not remaining asleep during the procedure (54%, 28%), a long wait for the operation (53%, 41%), sickness and vomiting (48%, 43%), appearing foolish (36%, 28%), not awakening from anesthesia (34%, 21%), and fear of injections (34%, 27%) were the most common concerns. The persistently high percentage of the patients who still had the same fears after they had been through surgery, suggests that their experience could have been improved.

This study has shown that our patients experienced very high levels of preoperative anxiety, and no steps were taken to reduce this. In our hospitals, we should follow the practice of explaining the diagnosis and surgery to be performed by the surgeon at the time of admission or during the stay in the ward. Preoperative informed consent should be properly taken. This should be supplemented by proper pre-anesthetic assessment one day before surgery, which includes explaining all the details regarding the planned anesthesia.

Anxiety testing is feasible in the preoperative period. It allows detection of patients with high anxiety, encouraging appropriate steps to ameliorate this.

Establishment of preoperative counseling clinics and proper informed consent taken before surgery will help in reducing preoperative anxiety and improving the quality of care.

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