

# Fear of going under general anesthesia: A cross-sectional study

## ABSTRACT

**Objectives:** Fears related to anesthesia have affected a considerable number of patients going for surgery. The purpose of this survey was to identify the most common concerns about general anesthesia during the preoperative anesthetic clinic in different healthcare settings, and whether they are affected by patients' sex, age, education, or previous experience of anesthesia or not.

**Materials and Methods:** Structured questionnaires with consent forms were distributed to patients in their preanesthesia clinic visit in three tertiary hospitals (King Abdul-Aziz Medical City, King Faisal Specialist Hospital, and King Khalid University Hospital) in Riyadh, Saudi Arabia. Patients' demographics and questions related to their fears regarding general anesthesia were included in the questionnaires. All categorical and interval variables were compared statically using a Chi-square test for independence and a *t*-test, respectively. All statistical tests were declared significant at  $\alpha$  level of 0.05 or less.

**Results:** Among 450 questionnaires that were distributed, 400 questionnaires were collected and analyzed. Eighty-eight percent experienced preoperative fear. The top three causes of their fears were fear of postoperative pain (77.3%), fear of intraoperative awareness (73.7%), and fear of being sleepy postoperatively (69.5%). Patients are less fearful of drains and needles in the operative theater (48%), of revealing personal issues under general anesthesia (55.2%), and of not waking up after surgery (56.4%). Age and gender were significant predictors of the overall fear among preanesthetic patients. Females are 5 times more likely to experience fear before surgery ( $P = 0.0009$ ). Patients aged more than 40 years old are also at 75% higher risk of being afraid ( $P = 0.008$ ).

**Conclusion:** The majority of the patients going for surgery experienced a fear of anesthesia. Mostly females, especially those over 40, were at a higher risk of being afraid. Fear can bring anxiety which, in turn, might affect the patient's surgery.

**Key words:** Anesthesia; cross-sectional study; fear; general anesthesia

## Introduction

Anesthesia is defined as a health practice that makes the patient unaware of their surroundings during a surgical procedure. Anesthesia aims to relieve the patient's intolerable pain during the surgical procedures that may potentiate extreme physiologic exacerbations and result


in unkind memories. The thought of undergoing general anesthesia frightens many people worldwide. To some, the thought of going under general anesthesia strikes terror in their hearts more than the thought of the actual surgical experience.<sup>[1]</sup> Some anxious patients might even choose to cancel their operations just because of the fears that they have of undergoing general anesthesia.<sup>[1]</sup> It is normal for

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one to be anxious when thinking that they cannot be in control of their own body. Fear of anesthesia is an important parameter that reflects the health quality in hospital. The anxiety and fear of anesthesia in patients who underwent surgery interfere with compliance of the patient in the postoperative period.<sup>[1]</sup>

Previous studies have shown that the majority of the patients feel anxious toward anesthesia. A study by Kain *et al.* showed that 75% of the subjects felt anxious about going under anesthetic.<sup>[1]</sup> The main sources of anxiety and fear in patients before the operation stems from the concern of the anesthesia itself (62%) rather than the surgical procedure (15%),<sup>[2,3]</sup> pain during or after the procedure,<sup>[4,5]</sup> and other psychophysical considerations.<sup>[6-8,9]</sup> Administering preanesthetic anxiolytics is one of the methods used to reduce the anxiety of patients who are otherwise ready to undergo surgery. Antianxiety medications such as midazolam and benzodiazepines are widely used as a preanesthetic aid in apprehensive patients.<sup>[10,11]</sup>

The purpose of this study is to recognize the concerns of patients regarding general anesthesia prior to their surgeries, assess the main sources of patients distress prior to anesthesia (including postoperative pain, fear of death, nausea, needle phobia, paralysis, awareness during surgery, and the worry over the chance of disclosure of personal information), and to determine the relationship between the fears and the demographics of the patient (gender, age, educational level, and previous experience with anesthesia).

## Materials and Methods

This is an observational cross-sectional survey on patients scheduled for surgery in the preanesthesia clinic. The study was performed at the preanesthesia clinics in three different tertiary hospitals including King Abdul-Aziz Medical City (KAMC), King Khalid University Hospital (KKUH), and King Faisal Specialist Hospital and Research Centre (KFSHRC). It was conducted with the approval of King Abdullah International Medical Research Center. The subjects included in this study were all patients above 18 years of age in the preanesthesia clinic scheduled for minor or major types of surgeries. Subjects who were excluded were patients who refused to fill out the questionnaire, patients who were under the age of 18, patients with communication problems, patients with a history of a psychiatric disorder, and patients who were physically unable to be interviewed (poor health condition, intubation, etc.). The main goal of this study is to estimate the prevalence of the most common fears of

general anesthesia among patients admitted for surgeries in KAMC, KKUH, and KFSHRC in Riyadh, Saudi Arabia. As reported in a previous study by Mavridou *et al.*, the most common fears were as follows: Postoperative pain (84%) and nausea (60.2%), paralysis due to the anesthesia (33.5%), and revealing personal information while anesthetized (18.8%). Assuming a 95% confidence interval,  $\alpha$  level of 0.05, a 5% precision, and a two-sided test, the required sample size was 400 subjects.<sup>[2]</sup>

Our study was modeled after the previously mentioned study by Mavridou *et al.*, which used a reliable and well-structured questionnaire.<sup>[2]</sup> This questionnaire was translated into Arabic and tested through a pilot study on 20 patients in the preoperative anesthetic clinic prior to the actual data collection. The questionnaire was amended according to the response of the patients in the validation process. The final form of the structured questionnaires was composed of two major sections: (1) Five questions about the demographic and clinical data of the patient: Age in years (18-25, 26-30, 31-40, 41-50, 51-60, or 61 and above), gender (male or female), educational level (none, high school, college, and PhD), type of surgery (minor or major), and previous experience of anesthesia (zero, once, twice, or three or more). (2) Fifteen questions regarding patients' fears concerning anesthesia. All questions have four possible answers "severe fear, moderate fear, mild fear, and no fear." The data collection started in June of 2013. Questionnaires were randomly distributed among all targeted patients in the preoperative anesthetic clinic. All patients consented to participate after being informed about the use of the questionnaire and anonymity was guaranteed; written consent was taken without revealing any personal information of the patients. The surveys were self-administered to patients in the preoperative anesthetic clinic after obtaining their consent. The data collectors (co-investigators) then gave the patients 2-3 min to fill out the questionnaire independently within a time frame between a few hours to few days before the patient undergoes the surgery. It was our objective to collect 400 questionnaires. The data were exported to a database structure in the form of a Microsoft Excel spreadsheet after collection. Raw data were processed in accordance with the best practice to identify any inaccuracies. All interval variables were checked and summarized in terms of maximum and minimum values. Minimum and maximum values were checked and compared against the nominal maximum and minimum value of each variable. A similar process was applied to categorical variables to identify any potential anomalies. Data were analyzed with the Statistical Package of Social Science 13.0 for Windows (SPSS, Chicago, IL, USA).

All variables were summarized and reported across the study using descriptive statistics. Categorical variables such as age groups, gender, education level, previous general anesthesia experience, and type of surgery were summarized in Table 1 and reported in terms of frequency distribution. All categorical and interval variables were compared statically across the study cohorts using Chi-square test for independence and *t*-test, respectively. All statistical tests were declared significant at  $\alpha$  level of 0.05 or less. Frequency analysis was used to analyze the fear of postoperative pain and the top three fears of general anesthesia. Results were reported in terms of frequency, 95% confidence interval, and standard error and proportion, respectively. The top three GA fears were compared across demographic characteristics using Chi-square test/*t*-test accordingly, the results were reported in terms of the estimate, standard error, and *P*-value. Significance was declared at  $\alpha < 0.05$ . Binary logistic regression was used to identify significant prediction of the overall fear. Results were reported in terms of odds ratio (OR), 95% confidence interval, and *P*-value. Results were declared significant at  $\alpha < 0.05$ .

## Results

We collected and analyzed 400 questionnaires from the preanesthesia clinics in all three tertiary hospitals. Patients' demographics is shown in Table 1. The majority of the patients were male 179 (54%). The mean age was  $30 \pm 12$ . The majority of the patients had either a high school education level 143 (37%) or a college degree 140 (36%). Most patients had previously been exposed to anesthesia more than 2 times 164 (42%). Minor surgeries accounted for 71% of all surgeries. By calculation of overall fear, the number of patients who were afraid was 355 (88.9%). The number of patients who were not afraid of either the surgery or anesthesia was 172 (46.4%), patients who were afraid of both was 142 (30.8%), and the number of patients who were afraid of anesthesia alone was 40 (10.8%).

Patients' specific fears and their severity are presented in Table 2. The top three causes of their fears were the fear of postoperative pain, 297 (77.3%), fear of intraoperative awareness, 273 (73.7%), and fear of delayed recovery of consciousness after anesthesia 262 (69.5%). Patients were found to be less fearful of drains and needles in the operative theater 175 (48%), of revealing personal information while under general anesthesia 208 (55.2%), and of not waking up after surgery 239 (56.4%). The results reveal that patients' demographics is related to their fears. Gender has the most significant effect with women being more afraid ( $P = 0.0009$ ). Age is another significant effect.

**Table 1: Patients' demographics**

Demographics data	n (%)
Gender	
Male	179 (54)
Female	152 (45)
Age	
18-40	194 (48)
41-60	124 (32)
>60	69 (18)
Education level	
Noneducated	91 (23)
High school	143 (37)
College	140 (36)
Ph.D.	6 (1)
Previous experience of GA	
No	130 (33)
1 time	93 (24)
>2 times	164 (42)
Type of surgery	
Minor	239 (71)
Major	96 (28)

Number of patients (%); GA: General anesthesia

**Table 2: Patients fears and their severity n (%)**

I'm afraid of	No fear	Mild fear	Moderate fear	Severe fear
Postoperative pain	87 (22.6)	83 (21.6)	141 (36.7)	73 (19)
Not waking up after the surgery (death)	159 (43.5)	75 (20.5)	69 (18.9)	62 (16.9)
Being nauseous postoperatively	133 (35)	110 (29)	103 (27.1)	33 (8.7)
Needles in the surgery	189 (51.9)	83 (22.8)	59 (16.2)	33 (9)
The anesthesiologist leaving during the surgery	145 (39.5)	78 (21.25)	79 (21.5)	65 (17.7)
Vomiting postoperatively	144 (40.4)	96 (26.9)	84 (23.6)	32 (8.9)
Being sleepy/drowsy for hours postoperative	115 (30.5)	109 (28.9)	109 (28.6)	45 (11.9)
Improper care postoperative	127 (34)	92 (24.9)	87 (23.5)	63 (17)
Unsuccessful GA*	97 (26.2)	86 (23.2)	92 (24.8)	95 (25.6)
Waking up during the surgery	116 (32.6)	73 (20.5)	77 (21.6)	89 (25)
Being paralyzed because of anesthesia	125 (33.5)	81 (21.7)	79 (21.1)	88 (23.5)
GA affecting my thought clarity	128 (34.6)	97 (26.2)	93 (25.2)	51 (13.8)
Admission to ICU	125 (22.5)	85 (22.7)	77 (20.6)	86 (23)
The anesthesiologist not being skilled	138 (37.4)	69 (18.70)	75 (20.3)	87 (23.5)
Revealing personal issues under GA	169 (44.8)	68 (18)	65 (17.2)	75 (19.8)

\*Awareness of surroundings during GA; GA: General anesthesia; ICU: Intensive Care Unit

Patients above the age of 40, compared with those under 40, are more afraid of general anesthesia ( $P = 0.008$ ). Patients who have had a previous exposure to anesthesia are slightly less afraid than those who did not receive anesthesia before ( $P = 0.05$ ).

## Discussion

A common problem that health care workers face in preanesthesia clinics is the patients' fear of going under general anesthesia. The overall fear of anesthesia in our patients before going for surgery constitutes the majority of them (88.9%). Once the physician announces to the patient the need for the surgery, the patient starts to think of the risks of the surgery itself or the anesthesia. Patients' answers to type of surgery they are going through are subjective to the patient themselves because there was not a specific criterion for major and minor surgeries. The majority of the patients stated that they were scheduled for a minor surgery (71%). Some patients who indicated they were scheduled for a major surgery noted that it was an open-heart surgery. In the previous studies, researches stated that the majority of the patients said that their fears are mainly because of anesthesia (62%) rather than the surgery (15%).<sup>[2,3]</sup> However, in our study, the fear of the surgical procedure (11.8%) is somewhat more than the fear of anesthesia (10.8%). A substantial number of patients state that they were afraid of neither the surgery nor anesthesia (46.4%), but after we had calculated their overall fear, it results that they were afraid. This is one particularly remarkable finding that some patients had conflicted answers. This could be due to the fact that the patient had never considered these fears (e.g., paralysis or the anesthesiologist leaving the OR) until they saw the question on the survey. An "I wasn't afraid until you told me what to fear" kind of idea...? We found that preoperative fear is greater in people of an older age (40 years and above) than people of a younger age. In a similar study by Mavridou *et al.*, the preoperative anxiety of anesthesia percentage reached (81%), with women being more stressed than men,<sup>[2]</sup> while in our study, this fear is even greater (88.9%), and once again women being 5 times more fearful.

We decided which specific fears to measure based on previous studies that addressed individuals' fears of anesthesia. There were some variances in the percentages of fears between different studies. Fears associated with anesthesia include:

1. Disclosing private matters while under anesthesia,
2. Anesthesia failure, or
3. Awakening during surgery.

There are fears associated with the anesthesiologist not being there in the operative theater or not being skilled enough. Fears associated with the postoperative period are having pain after waking up from anesthesia (reaches up to 77.3% in our study), permanent paralysis due to anesthesia, nausea or vomiting, being drowsy for hours, decreased cognition, and entering the Intensive Care Unit. Fear of death is surprisingly one of the least fearful factors to the patients (56.5%). Some

patients claimed that death does not bring them anxiety from general anesthesia or even from the surgery. Possible reason is because of the strong religious belief implemented in our society. In the former study that talked about patients' anxieties from general anesthesia, death was one of the top fears.<sup>[2]</sup> Those studies were conducted in gender and age impacted patients' fears the most. Females are more afraid and anxious than males. In our study, reasons for this may be due to the social pressure placed on men to behave fearlessly and not to exhibit vulnerabilities. Patients who were over 40 years old also say that they experience more fear of general anesthesia. Interestingly, in a previous study, they state that younger patients were more anxious preoperatively.<sup>[2]</sup> No specific cause can be predicted behind why our young patients are less afraid of anesthesia. It could be due to young people feeling invincible or that they are more trusting in modern medicine.

Some factors have an insignificant effect on patients' fears such as the level of education, and other past experiences of anesthesia. It is noteworthy that patients' ages have affected their perception of undergoing general anesthesia but their level of education does not have a major effect. Also, patients who underwent previous general anesthesia and patients who did not have experience have similar overall fears from general anesthesia. It is likely because they did not have the opportunity to be reassured by the anesthesiologist in their previous surgeries. The main outcome of this study is that a significant number of patients are experiencing preoperative fear (88.9%). These fears lead to anxiety. Anxiety is linked to many problems that might affect the patient declining the surgery, or might affect the efficacy of the anesthesiologist or surgeon, or it might complicate the surgery itself. The problems associated with preoperative anxiety can give autonomic nervous system disorders such as high blood pressure, arrhythmia, and palpitations.<sup>[12]</sup> This requires greater amounts of medication (such as propofol) to induce and maintain anesthesia.<sup>[13,14]</sup> Interestingly, patients who have preoperative anxiety have postoperative nausea, vomiting, and pain at a greater incidence,<sup>[15,16]</sup> and they also recover in a more prolonged time than patients who had less anxiety.<sup>[17]</sup>

## Conclusion

It is normal to experience fear before any surgery. We elaborated more on those fears that patients have. Females, especially those with the age of more than 40, are more afraid of undergoing GA. This fear is associated with preoperative anxiety. If this fear was not reassured and managed before the surgery, it can lead to several complications. We suggest adequate handling and management of patients who have

excessive anxiety towards GA in the pre anesthesia clinics before the patient goes to the OR. Building a good rapport between the patient and the anesthesiologist will relieve patients and ease their fears.

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**Conflicts of interest**  
There are no conflicts of interest.

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