

Patient's anxiety and fear of anesthesia: effect of gender, age, education, and previous experience of anesthesia. A survey of 400 patients

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Abstract

Purpose Patients express high anxiety preoperatively, because of fears related to anesthesia and its implications. The purpose of this survey was to gain insight into these fears and to study whether they are affected by patients' sex, age, education, or previous experience of anesthesia. **Methods** Questionnaires with fixed questions were distributed to consenting, consecutive surgical patients before the pre-anesthetic visit. The questionnaires included patients' demographics and questions related to their fears about anesthesia.

Results Four-hundred questionnaires were collected and analyzed. Eighty-one percent of patients experience preoperative anxiety. The main sources of their anxiety were fear of postoperative pain (84 %), of not waking up after surgery (64.8 %), of being nauseous or vomiting (60.2 %), and of drains and needles (59.5 %). Patients are less concerned about being paralyzed because of anesthesia (33.5 %) or of revealing personal issues (18.8 %). Gender seems to affect patients fears, with women being more afraid (85.3 vs. 75.6 % of men, $p = 0.014$). The effects of patients' age, level of education, and previous experience of anesthesia are minor, except for individual questions. Sixty-three percent of our patients (mostly women 67.4 vs. 57.4 % of men, $p = 0.039$) talk about these fears with their relatives, although a vast majority of 95.5 % would prefer to talk with the anesthesiologist and be reassured by him.

Conclusion All patients, mostly women, express fears about anesthesia; this fear leads to preoperative anxiety. Slight differences are observed for some individual questions among patients of different sex, education level, and previous experience of anesthesia.

Keywords Anesthesia · Questionnaires · Patient fear · Preoperative anxiety

Introduction

Preoperative anxiety is an important issue for patients scheduled for surgery which has been studied for decades. Most patients (almost 75 %) [1] express substantial anxiety, from the moment the need for surgery is announced until they enter the operating theater. In non-life-threatening procedures, the main source of preoperative anxiety is patients' fears and concerns about anesthesia (62 %), rather than surgery (15 %) [2]. Preoperative anxiety and patients' fears can complicate management of anesthesia and the postoperative period [3], and are mostly attributed to lack of proper information about anesthesia.

Patients' fears and concerns are often simple issues and questions that remain unanswered until the anesthetic preoperative visit. This visit is usually the only chance that patients have to receive valid information about anesthesia. The anesthetic preoperative visit has a calming effect on patients [4] and should be made relevant to patients' concerns, to help them cope with their fears and reduce their anxiety, even in the limited time that is usually available.

The purpose of this study was to record patients' main fears about anesthesia and whether these fears are related to patients' gender, age, education, or previous experience of anesthesia. Studying these results could enable us minimize

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our patients' fears, reassure them, and build a trustful patient–doctor relationship. Thus, we can increase patients' satisfaction and make them feel relaxed and more cooperative.

Materials and methods

The study was conducted with the approval of our hospital's Ethics and Deontology Committee and the National Center of Health Management. It took place in a tertiary hospital that serves the population of Northwestern Greece and many of the Ionian Islands. Simple questionnaires were used.

After reviewing the relevant bibliography [5], and after expert consultation, we compiled the pilot form of our questionnaire. Pilot questionnaires were distributed to selected patients of different sex, age, and education, scheduled for non-threatening surgical procedures, to test whether it was comprehensible and simple to use. Personal interviews with the participants were then conducted to ensure that questions considered important were included. Difficult and ambiguous questions were reworded. These patients were not included in analysis of the final results. The final form of the questionnaire contains a first section with patients' data as follows: sex (male or female), age (≤ 45 years old or >45 years old, because 45 is the median age of our population), education level (≤ 9 years or >9 years, because obligatory education in Greece is 9 years), and previous experience, or not, of anesthesia. The second section included one question about their wish to personally meet the anesthesiologist, one question about experiencing preoperative anxiety, and 15 questions regarding patients' fears concerning anesthesia. All questions had two possible answers "Yes, I am afraid of" or "No, I am not afraid of". There was a final question asking if they had discussed their fears with anyone, with six possible answers.

Questionnaires were distributed to consecutive surgical patients scheduled for non-life-threatening surgery under general anesthesia, the day before surgery, a few hours before the preoperative anesthetic visit. Our objective was to collect 400 questionnaires.

All patients had consented to participate after being informed about the use of the questionnaire, and anonymity was certified. Two young female anesthesiologists who were not part of the patients' anesthetic team distributed the questionnaires and the information about their use, and obtained the patients' consent.

The questionnaires were completed by the patients themselves, without any intervention by the anesthetists, or any other person.

Exclusion criteria: we excluded all patients who refused to participate, all patients under 18 years of age, those with

communication problems, illiterates, patients with a history of psychiatric disorders, those who did not speak Greek, and those who were not physically able to answer to the questionnaire themselves (patients in poor general condition, blind patients, etc.). We also excluded all questionnaires that were not fully answered or were illegible.

Data were analyzed with Statistical Package of Social Science 13.0 for Windows (SPSS, Chicago, IL, USA). Descriptive statistics (frequency distributions) were used for patients' demographics and responses to all questions. χ^2 analyses were performed to examine the relationship between patients' demographics (i.e., age, sex, educational level, previous experience with anaesthesia) and patient's answers to all the questions.

Results were considered statistically significant if the p value was less than 0.05.

Results

We collected and analyzed 400 completed questionnaires after distributing 430 (response 93 %). Patients' demographics are presented in Table 1.

Patients' answers about their fears in general and on the basis of gender (for which the differences were most prominent) are presented in Table 2.

In answers to related questions, almost all patients (95.5 %) wished to personally meet the anesthesiologist before surgery, and 81 % of patients stated they felt anxious about anesthesia, mostly women (85.3 vs. 75.6 % of men, $p = 0.014$).

The results reveal that patients' demographics are related to their fears as follows:

Gender

Patients' gender seems to have the most significant effect on patients' fears and anxiety, with women being more

Table 1 Patients' demographics as number of patients (% of total patients)

Gender	
Male	176 (44)
Female	224 (56)
Age	
18–45 years old	212 (53)
>45 years old	188 (47)
Education level	
≤ 9 years	184 (46)
>9 years	216 (54)
Previous experience of anesthesia	
Yes	264 (66)
No	136 (34)

Table 2 Patients' fears in general and on the basis of gender, as number of patients (% for each column)

	Total patients (<i>n</i> = 500)	Female (<i>n</i> = 224)	Male (<i>n</i> = 176)	<i>p</i> (women vs. men)
I am afraid of:				
Postoperative pain	336 (84)	199 (88.8)	137 (77.8)	0.003*
Not waking up after surgery (fear of death)	259 (64.8)	161 (71.9)	98 (55.5)	0.001*
Being nauseous postoperatively	241 (60.2)	154 (68.8)	87 (49.4)	<0.001*
Needles and drains	238 (59.5)	152 (67.9)	86 (48.9)	<0.001*
The anesthesiologist not attending to me throughout surgery	206 (51.5)	135 (60.3)	71 (40.3)	<0.001*
Vomiting postoperatively	201 (50.2)	129 (57.6)	72 (40.9)	0.001*
Being sleepy for hours postoperatively	192 (48)	123 (54.9)	69 (39.2)	0.002*
Improper postoperative care	185 (46.2)	108 (48.2)	77 (43.8)	0.374
Unsuccessful anesthesia (awareness during anesthesia)	171 (42.8)	103 (46)	68 (38.6)	0.140
Waking up during surgery	167 (41.8)	97 (43.3)	70 (39.8)	0.477
Being paralyzed because of anesthesia	134 (33.5)	78 (34.8)	56 (31.8)	0.528
Clarity of thoughts affected by anesthesia	122 (30.5)	66 (29.5)	56 (31.8)	0.612
Admission to intensive-care unit	121 (30.3)	69 (30.8)	52 (29.5)	0.786
The anesthesiologist not being experienced and qualified enough for my case	79 (19.8)	44 (19.6)	35 (19.9)	0.952
Revealing personal issues under the influence of anesthesia	75 (18.8)	38 (17)	37 (21)	0.302

n, number of patients; vs., versus

* *p* < 0.05

anxious and concerned than men. The results concerning patients' gender are presented in detail in Table 1.

Age

Patients under the age of 45 compared with those older than 45, are more afraid of waking up during surgery (46.7 vs. 36.2 %, *p* = 0.033) and of unsuccessful anesthesia/feeling throughout the procedure (50 vs. 34.6 %, *p* = 0.002). However they are less afraid of being (permanently) paralyzed due to anesthesia (28.3 % for patients ≤ 45 years old vs. 39.4 % for patients > 45 years old, *p* = 0.019).

Education

Patients with less than nine years of education compared with those with higher education, are more afraid of waking up during the procedure (48.4 vs. 36.1 %, *p* = 0.013) and vomiting postoperatively (56 vs. 45.4 %, *p* = 0.034).

Previous experience of anesthesia

Patients receiving anesthesia for the first time compared to those with previous experience of anesthesia, are more afraid of revealing personal issues because of anesthesia (24.3 vs. 15.9 %, *p* = 0.043) and that their judgment and clarity of thought will be affected (43.4 vs. 23.9 %, *p* < 0.001). They are also more afraid of improper postoperative care (55.1 vs. 41.7 %, *p* = 0.010).

In general, 63 % of our patients (mainly women 67.4 vs. 57.4 % of men, *p* = 0.039) had talked about their fears with someone. In descending order they confided in: their relatives (52.4 %), an anesthesiologist (21.8 %), their surgeon (16.7 %), another doctor (2.8 %), a nurse (5.2 %), or another patient in the ward (1.2 %).

Discussion

Patients' fear of anesthesia is a well known, common problem of anesthetic care. The vast majority of our patients (81 %) admit they are anxious about anesthesia, preoperatively. Preoperative anxiety, appearing with the announcement of the need for surgery and increasing with hospital admission, has been studied for decades. It is more intense in patients of younger age and it is more related to anesthesia (62 %) than the surgical procedure itself (15 %) [2]. In a more recent study (2010) the percentage of patients suffering from preoperative anxiety because of anesthesia is even greater (76 %), with women being more stressed than men [1], while in our study reaches an 81 %, with women being more anxious once again.

Although progress has been made in giving patients information about anesthesia, because of stricter rules for informed consent and people's easier access to information, patients are still concerned about simple issues that should have been adequately clarified.

Our patients' specific fears are in accordance to patients' fears in other older studies. There are only slight differences in the percentages of patients with individual fears. Fears expressed are related to anesthesia, for example revealing personal issues, unsuccessful anesthesia, feeling throughout the procedure, or waking up during surgery. Patients are also afraid of the anesthesiologist not being qualified enough, or not attending to them intra-operatively. Their main fears regarding the postoperative period are being in pain (patients' main fear about this period reaching 84 %), being permanently paralyzed because of anesthesia, vomiting or being nauseous, being sleepy for hours, having impaired judgment or clarity of thought, and possible admission to the ICU. The percentage of patients experiencing fear of death remains high (64.8 %). Similar fears are expressed in a number of studies conducted in several countries from 1972 to 2009, with slight differences in the order of importance [5–13].

Patients' fears are mostly affected by their gender with women being more anxious [5] and more afraid of several issues more than men. A possible explanation could be that men cannot easily express their fears and admit their weakness, or vulnerability, because of social standards.

Age, level of education, and previous experience of anesthesia seem to have a minor effect on patients' specific fears. It is remarkable how patients with previous experience of anesthesia seem to be as concerned and scared as first-timers. A possible explanation could be that they did not have the chance to be properly informed and reassured the last time they had surgery.

Our main result is that patients' fears lead to a substantial number of patients (81 %) suffering from preoperative anxiety; this is associated with a variety of perioperative problems. Some important anesthetic issues related to preoperative anxiety are: autonomic nervous system disorders [3], tachycardia, arrhythmia, hypertension [14], and requirement of larger amounts of propofol and sevoflurane for induction and maintenance of anesthesia [15, 16]. In addition, anxious patients tend to have a greater incidence of postoperative nausea and vomiting [17] and postoperative pain [18], and they tend to have prolonged recovery times [19].

Preoperative anxiety has been extensively studied by a variety of researchers. Scales such as the visual analog scale [20], or more specific ones, for example the Spielberger's state-trait anxiety inventory (STAI) for adults [21] and the Amsterdam preoperative anxiety and information scale (APAIS) [22], have been used to measure anxiety levels. In our study, we did not use any scale, because our objective was to record whether our patients suffer from preoperative anxiety or not and, mainly, to study their fears that provoke their anxiety. Patients' anxiety levels and their characteristics are topics for another study, so we asked them to simply report if they were anxious or not.

One result that should not be underestimated is that most patients confide their concerns and fears in their relatives, rather than trained personnel. This could be attributed to a poor anesthesiologist–patient relationship or to difficult access to the anesthesiologist, or a qualified nurse. This remains a problem that should be solved, so that patients can get proper help to deal with their fears and be reassured.

In conclusion, a substantial number of patients (mostly women, and with slight differences for younger and less educated patients and those with no previous experience of anesthesia) express fears and concerns about anesthesia, which leads to preoperative anxiety, an important issue that demands our attention. The fact that 95.5 % of our patients wish to personally meet the anesthesiologist before surgery reflects their need to be informed and reassured by the person who is responsible for their perioperative anesthetic care [23]. Building a good doctor–patient relationship can help our patients deal with their fears and anxiety, so that they can feel safe and reassured.

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