Received date: 10 February 2024 / **Accept date:** 18 March 2024
DOI: 10.61139/ijdor.1434753

Assesment of Patients' Basic Knowledge and Concerns About Anesthesia: A survey study

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Abstract

Background/Aim: This survey study aimed to investigate the knowledge and concerns of patients about anesthesia in the preoperative period.
Materials and Methods: A total of 150 patients scheduled for elective surgery, aged 18 to 65, with ASA (American Society of Anesthesiologists) classification 1-2, were included in the study. Patients who come to the anesthesia outpatient clinic in the preoperative period were asked to complete survey forms.
Results: It was observed that 47% of patients aged 60 and older had previous experiences with anesthesia (p=0.01). When the responses to the question "Do you know why you came to the anesthesia outpatient clinic?" were examined by age groups, it was found that 70% of patients aged 18-30, 70% of patients aged 31-60, and 29% of patients aged 60 and older did not know why they came to the anesthesia outpatient clinic (p=0.004). It was determined that as the level of education increased, the knowledge level about anesthesia increased and the level of concern decreased. Furthermore, it was found that as the socioeconomic status increased, the knowledge level about anesthesia increased.
Conclusion: It was determined that the level of education and socioeconomic status were factors affecting the level of anesthesia knowledge. Furthermore, it was found that the level of concern related to anesthesia was also associated with the level of education.

Research Article (HRU Int J Dent Oral Res 2023; 4(1):1-9)

Keywords: Anesthesia, questionnaire, anxiety

Introduction

Preoperative assessment plays a key role in reducing morbidity and mortality during surgical procedures and in the postoperative period. This assessment allows for the identification of previously undiagnosed health issues, reviewing anesthesia and surgical approaches, and preventing undesirable events during the perioperative and postoperative periods. Preoperative assessment is a clinical examination that falls under the responsibility of an anesthesiologist before administering anesthesia for any procedure (1). If anesthesiologists can adequately assess the patient's true condition during the preoperative visit, they can plan the procedure and the accompanying sedation or anesthesia more safely and effectively (1,2). The anesthesia method to be applied to the patient by the anesthesiologist and the associated preparations are based on evaluating anesthesia risk, ensuring that the procedure is performed under the most suitable conditions for the patient, assessing their physical and psychological

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condition, and considering their pharmacological and therapeutic history (2,3).

In the field of anesthesiology research, using survey studies to inquire about patients' opinions about anesthesia during the preoperative period, determine anxiety levels, and validate the quality of anesthesia is not a new practice. The belief that anesthetists and anesthesia practices are not well understood has led to numerous studies in this regard. These studies have explored patients' knowledge about anesthesia, the importance they attach to anesthetists, their preferences for anesthetists and anesthesia methods, and their desire to acquire information about anesthesia (4). These studies are important in providing information about patients' potential needs, expectations, and perceptions.

Preoperative anxiety in patients scheduled for surgery is important for anesthetists and surgeons. In a study of more than 15,000 patients undergoing non-obstetric surgery, preoperative anxiety was found to be the most challenging aspect of the perioperative period(5). Preoperative anxiety encompasses anxiety related to both anesthesia and the surgery itself. The intensity of the latter varies significantly in many patients (6). Due to its potential to lead to not only physical but also emotional and psychiatric issues, preoperative anxiety is one of the most significant concerns for patients (7). A recent survey study has indicated that fear of pain is the primary cause of anxiety (8).

In our country, the field of anesthesiology was recognized as a specialization in 1956. The importance attributed to anesthesiology and anesthetists has increased over the years. However, there still exists a presence of inadequate and incorrect information and education. Studies have shown that there is a lack of sufficient information concerning anesthesiology and anesthesists (9,10).

Based on this information, the aim of this planned study is to assess the level of knowledge of patients who present to the preoperative anesthesia clinic for elective surgery and to identify their preoperative concerns regarding anesthesia.

2. Materials and Methods

2.1. Patients and Study Design

Following the approval of the ……. Ethics Committee (…….), a total of 150 patients between the ages of 18 and 65, with American Society of Anesthesiologists (ASA) physical status classification 1-2, who presented to the anesthesia clinic for elective surgery between May and July 2010, were included in this survey study. Apart from these 150 patients, 26 patients who did not agree to participate in the study were excluded from the study. Mentally retarded patients, individuals with known psychiatric disorders, and those with any medical conditions that could limit the assessment were excluded from the study. Illiterate patients filled out the questionnaire with the help of their first degree relatives. This study was conducted in accordance with the 2008 Helsinki Declaration criteria.

Patients who presented to the anesthesia clinic in the preoperative period were asked to introduce themselves and fill out questionnaire forms by the anesthesiologist before the examination. The survey questions were formulated in a way that the patients could understand, and in cases where the patients did not understand a question, necessary explanations were provided by the anesthesiologist. The questionnaire consisted of two sections. The first section included personal information such as age, gender, education level, occupation, socioeconomic status, drug allergies, habits, and previous experiences with anesthesia, in addition to demographic information. The second section contained anesthesia-related questions, where patients' knowledge and concerns about anesthesia could be assessed (Table I).

Table I. Survey form

This survey is conducted to evaluate your knowledge about anesthesia and anesthesiologist.
History:
Form Number:
1. Your Gender:
Female
Male
2. Your age:
a-18/ 30 years old
b-31/ 60 years old
c-61 years and above
3. According to educational status:
a- Is illiterate
b- Primary education
c- Higher education
4. By professional group:
a- Unemployed
b- Worker/freelancer

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c- Public employee
5. According to socioeconomic status:
a-Low
b-Medium/high
6.“Do you know of any disease?”
a- Yes
b- No
7.“Do you have any habits?”
a- Cigarette
b- Drug/alcohol
c- None
8. “Have you had surgery under anesthesia (narcosis) before?”
a- Yes
b- No
9. “Are you allergic to any medications?”
a- Yes
b- No
10. “Do you know why you came to the anesthesia clinic?”
a- I know
b- I have no idea
11. “Where does an anesthesiologist work in a hospital?”
a- Outside the operating room (outpatient clinic, pain, intensive care, lithotripsy, radiology unit)
b- Operating room
c- I have no idea
12. “Which anesthesia method do you know?”
a-General
b-Local and/or regional
c- I have no idea
13. “Do you know what the anesthesiologist does in surgery?”
1- It follows the state of sleep, wakefulness, that is, consciousness.
2- Apart from monitoring sleep, wakefulness, that is, consciousness, heart rate, blood pressure,
It monitors fluid and blood loss, that is, all vital functions.
3- I have no idea
14. “Who should give you information about the anesthesia procedure to be applied during surgery?”
a- Surgical doctor
b- Anesthesiologist
15. “Who do you think gave the anesthesia during the surgery?”
a- Personnel (nurses and/or technicians)
b- Anesthesiologist
16. “What are your fears about the anesthesia procedure?”
1- I am afraid that I will not be able to sleep properly and will feel pain during the surgery.
2- I am afraid that I will not be able to wake up from anesthesia and that I will die.
3- I don't have any fear.
17. “Have you heard of regional anesthesia?”
a- Yes
b- No
18. “Who performs regional anesthesia?”
a- Personnel (nurses and/or technicians)
b- Anesthesiologist
c- I have no idea
19. “Do you have any concerns about the regional anesthesia procedure?”
1-I think I might have a stroke
2-I'm worried about staying awake and being aware of what's happening around me
3- I have no worries

2.2. Statistical Analysis

In our statistical analysis, the SPSS 16.0 for Windows (SPSS Inc. Chicago, IL, USA) software package was utilized. Descriptive statistics, including mean and standard deviation, were calculated for continuous variables in our study. Categorical variables were presented as percentages. To explore the relationships among the categorical variables in the survey, cross-tabulations were created, and Pearson's Chi-squared test was applied for larger than 2x2 contingency tables. For 2x2 contingency tables, Yates' corrected Chi-squared test was used. A significance level of $p<0.05$ was considered as the threshold for statistical significance in all evaluations.

3. Results

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This study, which aimed to assess the level of knowledge and preoperative concerns about anesthesia in patients presenting to the anesthesia clinic during the preoperative period for elective surgery, included 150 patients. Of the patients included in the study, 67 (45%) were between the ages of 18-30, 66 (44%) were between 31-60, and 17 (11%) were 60 years or older. Of the patients, 67 (45%) were female, and 83 (55%) were male. The majority of the patients in the study were primary school graduates (82 patients, 55%), unemployed (68 patients, 45%), and had a middle to high socioeconomic status (99 patients, 66%). It was determined that 66 patients (44%) had additional medical conditions, 33 (22%) had previous experience with anesthesia, and 18 (12%) had a history of allergies. The details of the patients' demographic characteristics can be seen in Table II.

Table II. Demographic characteristics of patients

Gender	n	%
Male	83	55
Female	67	45
Age		
18-30	67	45
31-60	66	44
>60	17	11
Educational background		
Primary school	82	55
Master's degree	37	24
Illiterate	31	21
Job		
Worker-freelancer	54	36
Officer	28	19
Unemployed	68	45
Socioeconomic level		
Low	51	34
Medium-High	99	66
Comorbidity		
Yes	66	44
None	84	56
Anesthesia experience		
Yes	33	22
None	117	78
Allergy history		
Yes	18	12
None	132	88
Total	150	100

When the responses to the questionnaire questions were compared by gender, it was found that male patients had a higher history of smoking, alcohol, and drug use compared to female patients ($p<0.001$). Looking at the responses to the question "What are your fears about the anesthesia procedure?", it was observed that the majority of female patients responded with "not waking up and dying," while male patients mostly responded with "I'm not afraid" ($p<0.001$). There was no statistically significant difference by gender in the responses to other questions ($p>0.05$).

When the responses to the questionnaire questions were compared by age group, it was observed that:

- 65% of patients aged 60 and above had chronic diseases ($p=0.01$).
- 58% of patients aged 31-60 had a smoking habit
- 47% of patients aged 60 and above had previous experience with anesthesia ($p=0.01$)
- 35% of patients aged 60 and above had allergies to any medication ($p=0.01$).

When the responses to the question "Do you know why you came to the anesthesia outpatient clinic?" were examined by age group, it was found that 70% of patients aged 18-30, 70% of patients aged 31-60, and 29% of patients aged 60 and above did not know why they came to the anesthesia outpatient clinic ($p=0.004$). There were no statistically significant differences in responses to other questions based on age ($p>0.05$).

When the responses to the survey questions were examined based on the level of education, it was observed that as the level of education increased, the knowledge level about anesthesia increased, and the level of anxiety decreased. Details can be seen in Table III.

Table III. Responses to Survey Questions by Education Level

Do you have any known medical conditions?	Yes	No	Total	p value
Illiterate (n/%)	9/29	22/71	31/100	
Primary school (n/%)	15/18	67/82	82/100	p=0.003
High education (n/%)	15/41	22/59	37/100	

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Do you have any habits?	Smoking	Alcohol-Drug	None	
Illiterate (n/%)	15/48	5/16	11/36	
Primary school (n/%)	30/37	5/6	47/57	p=0.202
High education (n/%)	15/41	5/13	17/46	
Have you had surgery under anesthesia (narcosis) before?	Yes	No	Total	
Illiterate (n/%)	6/19	25/81	31/100	
Primary school (n/%)	19/23	63/77	82/100	p=0.907
High education (n/%)	8/22	29/78	37/100	
Do you have any allergies to medications?	Yes	No	Total	
Illiterate (n/%)	5/16	26/84	31/100	
Primary school (n/%)	5/6	77/94	82/100	p=0.079
High education (n/%)	7/19	30/81	37/100	
Do you know why you came to the anesthesia clinic?	Yes	No	Total	
Illiterate (n/%)	16/57	15/43	31/100	
Primary school (n/%)	50/61	32/39	82/100	p=0.005
High education (n/%)	32/86	5/14	37/100	
Where does the anesthesia doctor work in the hospital?	Outside the operating room	In the operating room	I have no idea	
Illiterate (n/%)	5/16	5/16	21/68	
Primary school (n/%)	10/12	42/51	30/37	p=0.001
High education (n/%)	9/24	22/59	6/17	
Do you know any of the anesthesia methods?	General	Local	I have no idea	
Illiterate (n/%)	7/23	5/16	19/61	
Primary school (n/%)	24/29	18/22	40/49	p=0.001
High education (n/%)	21/57	11/30	5/13	
Do you know what the anesthesia doctor does during surgery?	Consciousness monitoring	Both consciousness and vital functions monitoring	I have no idea	
Illiterate (n/%)	5/16	5/16	21/68	
Primary school (n/%)	20/24	20/24	42/52	p=0.001
High education (n/%)	11/30	21/57	5/13	
Who do you think administers the anesthesia during surgery?	Nurse-technician	Anesthesia Doctor	Total	
Illiterate (n/%)	17/55	14/45	31/100	
Primary school (n/%)	32/39	50/61	82/100	p=0.001
High education (n/%)	5/14	32/86	37/100	
Who should provide information about the anesthesia procedure to be performed during surgery?	Surgeon Doctor	Anesthesia Doctor	Total	
Illiterate (n/%)	21/68	10/32	31/100	
Primary school (n/%)	35/43	47/57	82/100	p=0.001
High education (n/%)	7/19	30/81	37/100	
What are your fears regarding the anesthesia procedure to be performed?	Waking up in pain	Not waking up and dying	I have no fear	
Illiterate (n/%)	6/16	6/19	20/65	
Primary school (n/%)	5/6	25/30	52/64	p=0.001

When the responses to the survey questions were examined based on the socioeconomic status, it was found that as the socioeconomic status increased, the level of knowledge about anesthesia increased, but the level of anxiety did not change with socioeconomic status. Details can be seen in Table IV.

Table IV. Responses to Survey Questions by Socioeconomic Status

Do you have any known medical conditions?	Yes	No	Total	
Low (n/%)	10/20	41/80	51/100	
Middle-High (n/%)	29/29	70/71	99/100	p=0.278
Total	39	111	150	
Do you have any habits?	Smoking	Alcohol-Drug	None	
Low (n/%)	20/39	7/14	24/47	
Middle-High (n/%)	40/40	8/8	51/52	p=0.544
Total	60	15	75	

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Have you had surgery under anesthesia (narcosis) before?	Yes	No	Total	
Low (n/%)	9/18	42/82	51/100	
Middle-High (n/%)	24/24	75/76	99/100	p=0.474
Total	33	117	150	
Do you have any allergies to medications?	Yes	No	Total	
Low (n/%)	6/12	45/88	51/100	
Middle-High (n/%)	11/11	88/89	66/100	p=1
Total	17	133	150	
Do you know why you came to the anesthesia clinic?	Yes	No	Total	
Low (n/%)	20/39	31/61	51/100	
Middle-High (n/%)	78/79	21/21	99/100	p=0.001
Total	98	52	17/100	
Where does the anesthesia doctor work in the hospital?	Outside the operating room	In the operating room	I have no idea	
Low (n/%)	10/20	10/20	31/60	
Middle-High (n/%)	14/14	59/60	26/26	p=0.001
Total	24	69	57	
Do you know any of the anesthesia methods?	General	Local	I have no idea	
Low (n/%)	9/18	6/12	36/70	
Middle-High (n/%)	53/54	18/18	28/28	p=0.001
Total	62	24	64	
Do you know what the anesthesia doctor does during surgery?	Consciousness monitoring	Both consciousness and vital functions monitoring	I have no idea	
Low (n/%)	12/23	5/10	34/67	
Middle-High (n/%)	24/24	41/42	34/34	p=0.001
Total	36	46	68	

Who do you think administers the anesthesia during surgery?	Nurse-technician	Anesthesia Doctor	Total	
Low (n/%)	24/47	27/53	51/100	
Middle-High (n/%)	30/30	69/70	99/100	p=0.065
Total	54	96	150	
Who should provide information about the anesthesia procedure to be performed during surgery?	Surgeon Doctor	Anesthesia Doctor	Total	
Low (n/%)	38/75	13/25	51/100	
Middle-High (n/%)	25/25	74/75	99/100	p=0.001
Total	63	87	150	
What are your fears regarding the anesthesia procedure to be performed?	Waking up in pain	Not waking up and dying	I have no fear	
Low (n/%)	6/12	14/27	31/61	
Middle-High (n/%)	10/10	40/40	49/50	p=0.292
Total	16	54	80	

4. Discussion

In today's world, advancements in technology and communication have made it easy to access the desired information. Although this situation has led to information overload, the level of knowledge and awareness about health, both globally and in our country, has increased compared to the past. However, patients' knowledge about the role and education of anesthetists remains limited, and their functions are often overlooked and not well understood. These data are consistent with previous literature that recognition of anesthetists as specialist physicians varies between 50% and 99% (11-15).

Preoperative period is associated with significant anxiety and fears related to anesthesia and surgery, primarily due to the lack of sufficient public understanding of the science of anesthesia and inadequate efforts in this regard. Studies have reported that the most common concern in this field is related to the fear of "not waking up from anesthesia. Other concerns include death, intraoperative awareness, postoperative nausea,

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and vomiting (16). Lin et al. argued for the necessity of supporting patient education through preoperative video use and written information to reduce preoperative anxiety in patients. In this study, the use of preoperative videos and written information resulted in an increase in patients' knowledge and a slight decrease in anxiety levels (17).

The surgical procedure and anesthesia application to be performed in an unfamiliar environment outside the patient's home, possibly encountered for the first time, can lead to the patient's fear and anxiety, driven by concerns about death, disability, pain, and potential loss of organ functions. A detailed explanation of the anesthesia procedure and surgical interventions to be performed on the patient can reduce anxiety, leading to patient satisfaction and improved quality of care (18). Patients who are given ample time and detailed information about the procedure during the preoperative process consider it a privilege, recognizing the importance and care of meeting with an anesthetist. It has been observed that patients who meet with the same anesthetist multiple times and are well-informed tend to have higher satisfaction levels (19). In our study, 65% of the patients knew the reasons for coming to the anesthesia clinic, while a relatively high percentage, 35%, did not know why they were visiting the anesthesia clinic. This could be due to a lack of detailed information provided to the patients before their preoperative visit to the anesthesia clinic. In addition to not knowing the reason for coming to the anesthesia clinic, patients' lack of knowledge about the surgical procedure planned for them can also contribute to increased preoperative fear and anxiety. It was observed that there was a significant increase in the knowledge of the reason for coming to the anesthesia clinic with the increase in socioeconomic status.

In our study, when patients were asked about what an anesthetist does during surgery, 24% responded with "Monitors consciousness, i.e., sleeping and waking," 30% responded with "Monitors vital signs such as heart rate, blood pressure, fluid and blood loss, in addition to consciousness," while a significant portion (46%) chose "I have no idea." It was observed that as the level of education and socioeconomic status increased, there was an increase in the rate of selecting the correct response. Patients with higher levels of education appeared to be more curious about the anesthesia procedure they would undergo in the preoperative period and made more efforts to obtain information on the subject. In the study conducted by Demir and colleagues, 90% of patients stated that their anesthesia was administered by a doctor. This result can be seen as a positive development in our country. (20).

Many studies investigating the level of knowledge about anesthesia and anesthesiologists have yielded different results over the years and in different regions where the studies were conducted. In our study, when asked who administers the anesthesia process during surgery, 36% of patients chose "staff," while 64% selected "anesthesiologist." It was found that as the level of education increased, the percentage of those who answered "anesthesiologist" also increased . When asked about who provides information about the anesthesia procedure to be performed during surgery, a significant portion of the patients (42%) answered "surgeon," while 48% answered "anesthesiologist." This is not a favorable development for our region, as it indicates that the perception that information about anesthesia is provided by surgeons has not changed.

In a study conducted by Demir et al., it was reported that when concerns about anesthesia were queried, 35% of patients responded with "I have no fear at all" (20). In our study, when patients were asked about their fears related to the anesthesia they would receive, 10% of patients expressed fear of "not being able to sleep fully during surgery and feeling pain," 36% expressed fear of "not waking up from anesthesia and dying," and 54% stated that "they have no fear at all." It was found that as the level of education increased, patients' fears about the anesthesia procedure also increased. When concerns related to anesthesia were queried based on age groups, all patients aged 60 and above responded with "I have no fear." This result may suggest that fatalism is more common as a way of life in the elderly. Concerns about anesthesia were found to be higher in female patients compared to male patients. This difference is thought to be related to the fact that in our society, men are less expressive of their emotions and complaints. It reaffirms previous studies that have identified female gender as a risk factor for preoperative anxiety (21). In two studies it is stated that older age and male sex decrease preoperative anxiety (22,23).

In a study it was observed that high school graduates were significantly less anxious in comparison to primary school graduates (22). There are contradictory results concerning the educational status. In our study, the distribution of patients' fears about the anesthesia procedure based on their educational level showed that as

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the education level increased, fears about the anesthesia procedure also increased. This could be attributed to the awareness that educated people have about the risks involved in an operation. Illiterate patients had a high percentage (around 65%) of having no fears. Interestingly, in the literature, when fears related to anesthesia were investigated, patients often expressed concerns about "not waking up." It is notable that staying awake during surgery is as significant a concern as not waking up after surgery. In a study conducted by Demir et al., the awareness rate of regional anesthesia was found to be close to 70%, while in our study, we found that 38% of the patients had heard of regional anesthesia, and 62% had not (20).

Various studies have discussed the quantity of information and how it should be conveyed to reduce anxiety about the procedures and prevent it from escalating (24,25). In an other study it was showed that pre-surgery anxiety levels of cancer patients can be significantly reduced by educating patients on the planned surgical and anesthetic procedures in a preoperative anesthetic setting (26).

Therefore, reducing patients' anxieties is important. There is ample evidence in the literature showing that preoperative information plays a crucial role in reducing perioperative anxiety (27). When an anesthesia specialist identifies patients with high anxiety, they should use visual, auditory, and psychoeducational tools, conduct preoperative visits, as these interventions have been shown to reduce anxiety and provide additional information to patients (24).

This study had several limitations. First, the study was part of a single center survey which reduces generalizability of the results. Second, we aimed to focus on specific fears clearly associated with anesthesia. However, it is not always easy to attribute some concerns solely to anxiety related to anesthesia or surgery.

5. Conclusion

In conclusion, unfortunately, our study has shown that the social image of the field of anesthesia is not where it should be and that anesthetists and anesthesia practices are not sufficiently understood. Research is needed to identify the factors affecting patient satisfaction in anesthesia and the patient-doctor relationship and to develop reliable measurement methods. Studies in this field will contribute to improving the quality of anesthesia practices.

Note: Our article was produced from a thesis study conducted in 2010.

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Received date: 10 February 2024 / **Accept date:** 18 March 2024
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