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ORIGINAL RESEARCH ANESTHESIOLOGY

Prevalence of preoperative anxiety among surgical patients and the associated factors; a one-year study at Al-Hilla Teaching Hospital, Iraq

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ABSTRACT

Background & objective: Preoperative anxiety is an emotional state marked by heightened worry, tension, or fear, that most of the patients experience before surgery. Various factors have been mentioned in the literature, including age, gender, education and previous exposure to the surgery etc. The aim of our study was to evaluate and document the prevalence and determinants of preoperative anxiety among patients undergoing surgical procedures.

Methodology: This cross-sectional study was conducted to evaluate the preoperative anxiety level and its association with sociodemographic factors, knowledge, and previous anesthesia experience, in Al-Hilla Teaching Hospital from June 2024 to June 2025 (using the AMSTERDAMEI scale). 400 patients from either gender, were enrolled under convenient sampling. Structured questionnaires on demographic profiles, previous anesthesia and surgery experiences causing anxiety were used.

Results: Most participants were aged 30–39 years (34.0%). Gender distribution was equivalent (51.0% females, 49.0% males). The largest group of participants was employed (39.5%), followed by unemployed (32.5%). Over half (54.5%) experienced preoperative anxiety. The most frequent type of anesthesia in the previously exposed group was local anesthesia (18.0%), and 58.5% had never received any anesthesia. Psychological fears were high: fear of pain during operation (80.0%), fear of death (53.5%), and the concern regarding the experience of the anesthetist (52.0%). Anxiety was significantly associated with occupation (P = 0.0001) and educational level (P = 0.0001), but there were no significant relationships with age, gender, marital status, or anesthesia type using statistical analysis. Patients with increased levels of previous knowledge about anesthesia and surgery, had lower anxiety scores (5.40 ± 1.49 vs. 4.99 ± 1.61, P = 0.03).

Conclusion: Professional history and education have a big effect on how anxious the are the patients before surgery. On the other hand, informing patients about the conduct of the anesthesia can help lower their anxiety levels.

Keywords: Anxiety; Demographic; Knowledge; Preoperative anxiety.

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1. INTRODUCTION

Preoperative anxiety is an emotional state marked by heightened worry, tension, or fear that patients experience before surgery.[1] It might be because of worries about the procedure, the anesthesia, or what might happen after the surgery. This type of anxiety, which is common among surgical patients, might differ

in severity depending on medical history, personality, and cultural setting.[2, 3] Clinical consequences of preoperative anxiety are numerous and significant. It is associated with an enhanced physiological stress response (i.e., autonomous nervous hyperactivation) that may lead to tachycardia, hypertension, and impaired hemodynamic stability.[4, 5] It also increases a person's sensitivity to pain, reduces the degree of happiness that patients experience, and prolongs recovery time in surgery.[6] It may also have an impact on the patient's prognosis, for it has been related to worse outcomes following surgery.[7] Epidemiologically, the incidence of preoperative anxiety is different in different areas and economic status. It is experienced by 11% to 80% of patients in the world, depending on the population studied and the tools used for assessment.[8] In Africa, this frequency varies from 61% to 67%.[9, 10] and is frequently linked to restricted access to information, inadequate communication between healthcare workers and patients, and a deficiency of psychological resources in hospitals. In Cameroon, preoperative anxiety impacts around 59% to 68% of patients; however, little research has particularly examined this phenomenon.[11, 12] In a resource-poor context, as is the case in Cameroon, where access to quality treatment and regular information are often only available within part of the national territory, some assessment and addressing of preoperative anxiety might be considered an important issue for the patient himself/herself and for his/her prognosis. These factors may reduce surgical complexity, save hospital resources, and improve patient results. If we can figure out what's driving this worry, that would enable us to develop strategies to help, such as better communication between patients and physicians and the addition of psychological support methods. The aim of the study is to evaluate the prevalence and determinants of preoperative anxiety among patients undergoing surgical procedures at Al-Hilla Teaching Hospital.

2. METHODOLOGY

A descriptive cross-sectional study was done in Al-Hilla Teaching Hospital during the period from June 2024 to June 2025 to assess preoperative anxiety and its relationship with patients' knowledge and demographic factors of candidates for elective surgery. Study participants Adults aged ≥20 years who were admitted for elective surgery and consented to the study were considered. Patients with a history of psychiatric illness or on anxiolytics were not included to reduce confounding factors. After reviewing the related literature and after consulting with some experienced anesthesiologists, a structured questionnaire was prepared by the researchers themselves. It has three main sections. In the first part, sociodemographic variables such as age, sex, marital status, occupation, and education level were included. The second part inquired about the previous history of anesthesia, the type of anesthesia performed, and whether or not the patient had been informed about surgery as well as pain management. The third part comprised anxiety level evaluation by the Amsterdam Preoperative Anxiety and Information Scale (APAIS), which has been validated as a good test to evaluate preoperative anxiety and the necessity of information in surgical patients.

Table 1: Demographic profile

Variables		N (%)
Age groups (years)	20-29	66 (16.5)
	30-39	136 (34.0)
	40-49	106 (26.5)
	≥50	92 (23.0)
Gender	Female	204 (51.0)
	Male	196 (49.0)
Occupation	Doctor	44 (11.0)
	employed	158 (39.5)
	Nurse	68 (17.0)
	Unemployed	130 (32.5)
Marital state	Married	224 (56.0)
	Single	176 (44.0)
Education	Bachelor	96 (24.0)
	High School	118 (29.5)
	Master	82 (20.5)
	PhD	104 (26.0)

The APAIS is a six-item instrument with five-point Likert ratings and offers anxiety and information-desire scores. After receiving informed consent, participants were interviewed in the preoperative area. The purpose of the study was clearly described, and confidentiality of responses was guaranteed. Anxiety scores were obtained from the APAIS, and knowledge scores were constructed for anesthesia awareness items.[1] All data were processed by SPSS 25. The data were summarized by descriptive statistics (frequency, percentage, mean, and standard deviation).

A chi-square test was performed to assess the association of categorical variables and mean anxiety scores as well as an independent sample t-test to compare the mean knowledge scores between those with and without anxiety. A value of $p < 0.05$ was considered significant. This study was approved by the Ethical Committee of Al-Hilla Teaching Hospital, and all participants were explained that participation is voluntary and

understanding and confidentiality in this research is guaranteed.

Table 2: distribution of patients according to anxiety and anesthesia types.

Variable	Category	n (%)
Anxiety	No Anxiety	182 (45.5)
	Anxiety	218 (54.5)
Type of anesthesia	General	36 (9.0)
	Local	72 (18.0)
	Not applicable	234 (58.5)
	Regional	58 (14.5)

3. RESULTS

Patient's demographic profile shows the distribution of participants according to age, gender, occupation, marital status, and education (Table 1). The largest age group was 30–39 years (34.0%), followed by 40–49 years (26.5%) and those ≥50 years (23.0%), while the youngest group (20–29 years) formed 16.5% of the sample. Females slightly predominated (51.0%) over males (49.0%), indicating nearly equal gender participation. Regarding occupation, the majority were employed (39.5%), while unemployed individuals constituted 32.5%, nurses 17.0%, and doctors only 11.0%, 56% of patients are married, about education; 29.5% of patients are high school degrees and 26% of them are PhD holders.

More than half of participants (54.5%) reported experiencing anxiety, compared with 45.5% have not. In terms of anesthesia exposure (58.5%) not applicable. Among those who had anesthesia, local anesthesia (18.0%) was more common than regional (14.5%) and general anesthesia (9.0%) (Table 2).

Patients undergone anesthesia previously (51.0%) and had received explanations about the purpose of surgery (55.0%) or pain management plans (51.5%). However, psychological fears were prevalent:

- Fear of death was reported by 53.5%,
- Fear of waking during surgery by 50.0%,
- Fear of postoperative pain by 48.5%,
- Fear of anesthetist's experience level by 52.0%,
- Fear of needles by 51.5%, and
- Most notably, fear of feeling pain during surgery by a striking 80.0%.

These results demonstrate significant peri-operative anxiety and insufficient reassurance, emphasizing the need for effective preoperative counseling and patient education (Table 3).

Age group, gender, marital status, and type of anesthesia were not significantly associated with anxiety ($p > 0.05$). However, occupation ($P = 0.0001$) and education level ($P = 0.0001$) showed significant associations. Doctors were anxiety-free (0% with anxiety), whereas employed, nurse, and unemployed groups showed markedly higher anxiety levels. Patients with PhD and bachelor degrees reported higher anxiety compared to those with master or high school education, suggesting that awareness and expectations may influence anxiety perception. These findings indicate that occupational and educational background play major roles in shaping peri-operative anxiety (Table 4).

The mean knowledge scores between anxious and non-anxious participants. Patients without anxiety had a higher mean knowledge score (5.40 ± 1.49) than anxious patients (4.99 ± 1.61), with a statistically significant difference ($P = 0.03$). This finding suggests that better knowledge about anesthesia and peri-operative care is linked to reduced anxiety, underscoring the importance of patient education and effective preoperative communication.

4. DISCUSSION

Table 3: The positive responses of the patients regarding their knowledge .

Variable	N (%)
Have you undergone anesthesia before	204 (51.0)
Did you receive an explanation about the purpose of the surgery	220 (55.0)
Did you receive details about the pain management plan	206 (51.5)
Do you have a fear of death related to surgery	214 (53.5)
Do you have a fear of waking up during surgery	200 (50.0)
Do you have a fear of postoperative pain	194 (48.5)
Do you have a fear of becoming disabled after surgery	184 (6.0)
Do you have a fear regarding the anesthetist's level of experience	208 (52.0)
Do you have a fear of needles	206 (51.5)
Do you have a fear of feeling pain during surgery	320 (80.0)

Table 4: association between demographic profile and anxiety.

Variables		Anxiety		P-value
		Not anxious	Anxious	
Age groups	20–29	14 (17.5)	52 (16.3)	0.5
	30–39	22 (27.5)	114 (35.6)	
	40–49	22 (27.5)	84 (26.3)	
	50–59	22 (27.5)	70 (21.9)	
Gender	Female	36 (45.0)	168 (52.5)	0.3
	Male	44 (55.0)	152 (47.5)	
Marital state	Married	40 (50.0)	184 (57.5)	0.2
	Single	40 (50.0)	136 (42.5)	
Occupation	Doctor	44 (55.0)	0 (0.0)	**0.0001**
	Employed	16 (20.0)	142 (44.4)	
	Nurse	2 (2.5)	66 (20.6)	
	Unemployed	18 (22.5)	112 (35.0)	
Educational Level	Bachelor	12 (15.0)	84 (26.3)	**0.0001**
	High School	32 (40.0)	86 (26.9)	
	Master	26 (32.5)	56 (17.5)	
	PhD	10 (12.5)	94 (29.4)	
Type of Anesthesia	General	8 (10.0)	28 (8.8)	0.3
	Local	16 (20.0)	56 (17.5)	
	Not applicable	40 (50.0)	194 (60.6)	
	Regional	16 (20.0)	42 (13.1)	

This study was carried out at Al-Hilla Teaching Hospital during a period extending to evaluate the prevalence of preoperative anxiety and its correlation with patient education and sociodemographic variables in patients waiting for elective surgery. Consequences showed that 54.5% of respondents felt anxious before surgery—a rate in line with those found in other hospital-based studies; preoperative anxiety affected between 40% and 70% of surgical patients.[13, 14] Preoperative anxiety is a frequently occurring psychological response and is known to affect recovery, postoperative pain, and overall level of patient satisfaction.[15] The demographic analysis revealed that it had no significant difference for anxiety level with regard to age, gender, and marital status ($P > 0.05$). Our result is in agreement with that of Liu W et al. (2022), who also reported that demographic factors did not correlate significantly with preoperative anxiety.[16] Nevertheless, some research has reported greater levels of anxiety in female patients that could be related to greater emotionalism and cultural factors in fear expression.[17] The lack of gender differences found in this study could represent an evolving social perspective as regards surgery and awareness on the part of both sexes. Occupation had a significant correlation with anxiety ($P = 0.0001$). Anxiety symptoms were not reported by any of the doctors, but nurses, workers, and participants who were unemployed had higher levels.

This might have been due to variation in medical experience and level of awareness about operations. Similar study findings have been reported by Chow CHT et al. (2019), showing that patients with a poor comprehension of medicine were more likely to misunderstand perioperative risks and therefore became more anxious.[18] Moreover, Nigussie et al. indicated that reducing anxiety by clarifying misconceptions largely depends on patient education.[19] There was also a marked correlation between education level and anxiety ($P = 0.0001$). Those who had a doctorate or bachelor's degree reported more anxiety than their counterparts with high school or master's education. This is perhaps because well-educated people are more aware of the possible surgical risks and postoperative complications.[20] Hounsome J et al. (2017) reported that a moderate, not low, level of education was associated with less anxiety, which may be due to neither underestimating nor overestimating the risk, as these patients have a more than adequate understanding concerning medical procedures.[21] Regarding the content, participants who had obtained sufficient preoperative information and advice reported lower anxiety levels according to life. The average knowledge score of non-anxious patients (5.40 ± 1.49) was significantly greater than that of anxious ones (4.99 ± 1.61, $P = 0.03$), revealing increased insight into surgery and surgical methods decreased anxiety level. These are consistent with results previously reported by Feninets V et al. (2022) and Dawod MS et al. (2024); structured preoperative education enhances patient confidence and decreases psychological distress.[22, 23]

CONCLUSION

The research concludes that preoperative anxiety is a significant problem that is influenced mostly based on occupation, education, and degree of knowledge, rather than age or gender. Targeted counseling and more effective communication at pre-anesthesia consultations

are powerful tools for improved patient education, for decreased anxiety, and for better perioperative results. The use of authorized tools such as APAIS in daily practice could play a role in recognizing high-risk patients and guiding interventions.

7. Data availability

The numerical data generated during this research are available from the authors.

8. Conflict of interest

All authors declare that there was no conflict of interest.

9. Funding

The study utilized the hospital resources only, and no external or industry funding was involved.

10. Authors' contribution

Amani Alaa Saeed has been the sole author of this research paper.

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