

Prevalence and Determinants of Preoperative Anxiety Among Iraqi Adults Using the Amsterdam Preoperative Anxiety and Information Scale (APAIS)

Hussein Talib Mohsin¹, Ali Muayad Jawad², Mustafa Mohammed Salih³

Baghdad Teaching Hospital^{1,2,3}



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Preoperative, anxiety, APAIS, prevalence, Iraq.

ABSTRACT

Although surgical procedures have improved, preoperative anxiety remains a concern in preoperative treatment and visit which is recognized as a common reaction among patients awaiting surgery. To assess the prevalence and determinants of preoperative anxiety among adult surgical patients using APAIS questionnaire. A cross sectional study that included 400 adult healthy respondents who were attended the selected clinics for any complain and selected randomly to participate in this study. Two different types of questionnaires had been applied to all attendants to collect needed information. The first questionnaire included questions to gather information on certain socio – demographic variables and the second questionnaire applied was the validated Amsterdam Preoperative Anxiety and Information Scale (APAIS). Preoperative anxiety was detected in 31.5%; while 61% had intermediate level of information. Four factors were found to be significant independent risk factors for greater likelihood of preoperative anxiety. These factors were young age (OR= 6.54), female gender (OR= 10.43), higher education (OR= 14.53), and negative history of previous surgery (OR= 2.76). Prevalence of preoperative anxiety was not high in this study. Factors that increase this prevalence were younger age, female gender, higher educational level, and lack of previous surgical experience.



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1. INTRODUCTION

Anxiety is a natural, emotional, rational, and predictable reaction to real or perceived threat. Anxiety Disorders are defined as anxiety symptoms that are persistent, illogical, excessive, and/or severe; occur in the absence of stressful events or stimuli; or interfere with daily activities [1]. Preoperative anxiety is a common reaction experienced by patients who are admitted to a hospital for surgery [2]. It is an emotional state of anxiety, uneasiness, and worry about hazardous occurrences that is accompanied by restlessness, weariness, attention issues, and muscular tension, as well as a physiological state of awareness [3], [4]. Surgery and general anesthesia are still two of the most stressful events in a patient's life, with three separate negative aspects: the fear of the unknown, the chance of becoming ill, and the possibility of death [5]. Preoperative anxiety has a significant impact on surgical results. It has the potential to produce hypertension, an increase in heart rate, and, as a result, bleeding. Furthermore, a greater level of preoperative anxiety has been linked

to a higher postoperative pain-relieving demand [6]. Major cardiovascular problems associated with health-related behaviors such as smoking, poor diet, poor adherence to treatment, or an inactive lifestyle are more likely to cause mortality and morbidity when associated with anxiety, also anxiety have a direct impact on myocardial perfusion, autonomic nervous system regulation, platelet activation, increased hypothalamus-pituitary-adrenal axis activity, and exaggerated inflammatory processes. The prevalence of preoperative anxiety varies depending on the type of operation performed [7- 9]. It is around 60%–80% in the western population and different populations across the world might have different prevalence rates [10]. The assessment of anxiety is important, because the response to anesthesia and analgesia in anxious patients is different when compared with non-anxious patients [11]. Patients with extreme preoperative anxiety, for example my experience peripheral vasoconstriction which lead to difficult cannulation, also tend to require larger doses of induction agents and analgesics and tend to have longer hospital stays [10]. If a quantitative assessment instrument, such as a questionnaire, is available, the anesthetist can quickly determine the patient's level of anxiety and address the factors that influence it. Several validated questionnaires are being used to assess anxiety. The Amsterdam Preoperative Anxiety Information Scale is one of them (APAIS). This questionnaire has only six questions and is thus a cost-effective tool. It was used in a number of worldwide research and shown to be beneficial. The APAIS has also been validated in surgical patients, and it is now the gold standard for perioperative anxiety evaluation in several countries [12]. The aim of this study was to assess the prevalence and determinants of preoperative anxiety among adult surgical patients using APAIS questionnaire.

2. Subjects and Methods

2.1 Study design, setting, and time

This was a cross sectional study that conducted at outpatient clinics of Baghdad Teaching Hospital / Medical City / and private clinic in Baghdad for a period of six months from 1st Mar. to 1st Sept. 2021.

2.2 Study Population and sample size

The study included 400 adult healthy respondents who were attended the selected clinics for any complain and selected randomly to participate in this study. Subjects who have known psychiatric illness, those who were on any type of anxiolytic medications, critically ill patients who were not sufficiently alert to be able to respond to questions, and those who refused to participate were excluded from this study. All respondents were informed about the nature and aim of the study and verbal consent was obtained to review their medical records for research purposes as long as the patient anonymity and confidentiality of their medical records are maintained.

2.3 Sample size

The sample size was calculated using the following equation: $n = (z^2pq)/d^2$ in which n = sample size, z = 1- α /2 percentile of a standard normal distribution = 1.96, p = expected proportion (unknown, so we assume 0.5), q = 1- p , and d = absolute precision = 0.05. The estimated sample was 384, but we included 400 respondents to consider any non-response and to increase the power of this study.

2.4 Data collection

Two different types of questionnaires had been applied to all attendants to collect needed information, the questionnaires were filled by the researcher through direct interview with the study population. The first questionnaire included questions to gather information on certain socio – demographic variables (age, gender, monthly income, occupation, residence, and educational level), history of previous surgeries, HTN and DM. The second questionnaire applied was the validated Amsterdam Preoperative Anxiety and Information Scale

(APAIS) which consists of six items to assess the magnitude of patient's preoperative related anxiety (Table 1) [13]. The responses to the statements are evaluated with a Likert Scale (1-Not at all, to 5-Extremely). It has been sub-grouped into three components; anesthesia-related anxiety (two items), surgery-related anxiety (two items) and information desire component (two items). Total preoperative anxiety is the sum of anesthesia and surgery related anxiety. APAIS score ≥ 11 is indicative to have preoperative anxiety. Regarding information desire, a score of ≥ 5 indicates that the patients must receive more information about what they wish to be informed; while the score < 5 is a sign that the patient should be provided with only basic information [14]. Need-for-information was classified into low (2-4), intermediate (5-7), and high (8-10) [15]. The APAIS has previously been described in detail and validated in many countries using different languages [16]. Recently published results of this survey demonstrated that the reliability (Cronbach's α) of the four anxiety items ("anxiety scale") and of the two information items ("information scale") were 0.87 and 0.74, respectively. Given the strong evidence concerning the validity and reliability of the APAIS it can be considered the gold standard to measure preoperative anxiety [17].

Table 1: APAIS

Statement	Part
1. I am worried about the anesthetic	Anesthesia
2. The anesthetic is on my mind continually	
3. I would like to know as much as possible about the anesthetic	Information desire
4. I am worried about the procedure	Surgery
5. The procedure is on my mind continually	
6. I would like to know as much as possible about the procedure	Information desire

2.5 Statistical analysis

The data analyzed using Statistical Package for Social Sciences (SPSS) version 26. The data presented as mean, standard deviation and ranges. Categorical data presented by frequencies and percentages. Logistic regression analysis applied, using the preoperative anxiety as the dependent variable and the variables that were found significant in the binary analysis were included in the model as the independent variables. A level of P – value less than 0.05 was considered significant.

3. Results

In this study, mean age of participants was 40.04 ± 13.2 years; 66.5% were females; 41.5% had finished primary school; 72.3% were living in urban area; 54.8% had monthly income between 500,000 – 1,000,000 Dinars; 39% were unemployed; 44.3% had chronic medical diseases; and 55.3% had previous history of surgery. Regarding APAIS score, preoperative anxiety was detected in 31.5% of study participants; while 61% of them had intermediate level of information as shown in table (2)

Table 2: Distribution of study participants by certain characteristics

Variable	No. (n= 400)	Percentage (%)
Age (Years)		
< 30	72	18.0
30 - 49	220	55.0
≥ 50	108	27.0
Gender		
Male	134	33.5
Female	266	66.5
Educational level		
Illiterate	81	20.3

Primary school	166	41.5
Secondary school	77	19.2
Higher education	76	19.0
Residence		
Urban	289	72.3
Rural	111	27.7
Monthly income (Iraqi Dinar)		
< 500,000	102	25.5
500,000 – 1,000,000	219	54.8
> 1,000,000	79	19.7
Occupation		
Employee	143	35.8
Unemployed	156	39.0
Student	44	11.0
Retired	57	14.2
Chronic medical disease		
Yes	177	44.3
No	223	55.7
Previous surgery		
Yes	221	55.3
No	179	44.7
Preoperative anxiety		
Yes	126	31.5
No	274	68.5
Need for information		
Low	98	24.5
Intermediate	244	61.0
High	58	14.5

In this study, mean of total APAIS score was 9.56 ± 3.2 ; of anxiety score was 6.2 ± 2.8 ; and the mean score of desire for information was 6.21 ± 2.1 . The details of responses to APAIS statements were shown in table (3)

Table 3: Responses to APAIS statements

APAIS Statement	Not at all No. (%)	Slightly No. (%)	Moderately No. (%)	Very No. (%)	Extremely No. (%)
1. I am worried about the anesthetic.	244 (61.0)	87 (21.8)	43 (10.8)	17 (4.2)	9 (2.2)
2. The anesthetic is on my mind continually.	189 (47.2)	101 (25.2)	56 (14.0)	31 (7.8)	23 (5.8)
3. I would like to know as much as possible about the anesthetic.	177 (44.2)	168 (42.0)	17 (4.2)	28 (7.0)	10 (2.5)
4. I am worried about the procedure.	204 (51.0)	87 (21.8)	74 (18.5)	27 (6.8)	8 (2.0)
5. The procedure is on my mind continually.	188 (47.0)	107 (26.8)	64 (16.0)	29 (7.2)	12 (3.0)
6. I would like to know as much as possible about the procedure.	103 (25.8)	111 (27.5)	125 (31.2)	39 (9.8)	12 (3.0)

Logistic regression analysis was applied (table 4) using preoperative anxiety outcome as the dependent variable and the variables that showed significant association in the binary analysis as the independent variables. Four factors were found to be significant independent risk factors for greater likelihood of preoperative anxiety. These factors were young age (OR= 6.54), female gender (OR= 10.43), higher education (OR= 14.53), and negative history of previous surgery (OR= 2.76).

Table 4: Logistic regression analysis for association of various risk factors with prevalence of preoperative anxiety

Variables	Odd's ratio	95% C.I for odd's ratio	P - Value
Young age	6.54	2.2 – 14.59	0.001
Female gender	10.43	4.76 – 22.84	0.001
Higher education	14.53	2.99 – 31.3	0.001
Negative history of previous surgery	2.76	1.35 – 5.62	0.005

4. Discussion

Anxiety is one of the most prevalent preoperative events for surgical patients, and it's linked to a variety of physiological and psychological side effects [1]. The goal of this study was to gather evidence of preoperative anxiety and assess its determinants among adult respondents in order to develop measures to reduce preoperative anxiety and its related negative effects. Extensive questionnaires are not appropriate in clinical settings during the preoperative phase. As a result, having appropriate screening devices to assess preoperative anxiety is critical. Aside from objectivity, reliability, and validity, application, which includes brevity, clinical relevance, patient acceptability, and a quick and simple analytic style, is critical [15]. APAIS questionnaire consists of six items and is, therefore, an economical instrument. In this study, prevalence of preoperative anxiety was 31.5% and the analysis showed that participants who are younger age, female gender, highly educated, and with negative history of previous surgery have higher anxiety scores. This prevalence was lower than many other studies as studies conducted by (62%) [11], By (76.7%) [14], and by (70.3%) [18]. It was surprising that large number of participants didn't feel fear from surgery or anesthesia and this could be resulted from the expenses of the surgical treatment in the private health sector might make their care is beyond reach, the waiting list, fulfilling the required investigation to reach the final preoperative anesthetic check is a trophy and brighten hope rather than a source of fear. Other possible explanations for the differences in prevalence rate are the different demographic features of the participants who were included in the study and the use of different evaluation tools in other research.

This study showed that the younger participants had more preoperative anxiety than the participants over 50 years old. This is agreed with previous studies conducted by [19], [14] and this could be due to the elderly are more accepting of reality and have likely been exposed to the health-care system before. Female participants experienced higher levels of state anxiety than males in this study and this is agreed in studies conducted by [20], [21] and this is could be due to hormonal differences. In addition, Females are more likely than males to communicate their worry, and isolation from family has a greater impact on women. This study showed that participants with a history of previous surgical experience were less anxious than patients coming for surgery for the first time. This was in accordance with other similar studies [10], [22]. This could be due to less fear of surgery or less misunderstandings about anesthesia and surgery. Higher education was found to be related to higher anxiety levels in this study. This result is supported by [11] but not by [23]. It's possible that people with a higher education level were more aware of the risks associated with surgery and anesthesia. Another possibility is that information seeking behavior was more common in highly educated people, which was associated with a higher level of anxiety. In conclusion, prevalence of preoperative anxiety was not high in this study. Factors that increase this prevalence were younger age, female gender, higher educational level, and lack of previous surgical experience. Organizing intervention and training programs is crucial to regulate and reduce preoperative anxiety among patients, notwithstanding the low anxiety ratings. We recommend to do further larger studies with larger sample size in other regions to confirm these results.

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6. References

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