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Pre-Operative Anxiety and Health Problems of Patients Attending Hospitals of Kirkuk, Iraq

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Abstract

Background: Preoperative anxiety is a challenging problem in the preoperative care of patients. A common low level of anxiety is an expected reaction to unpredictable and potentially life-threatening circumstances, especially for a patient's first surgical experience. It is a response to external or internal stimuli that can have behavioral, emotional, cognitive, and physical symptoms. This study aimed to identify the anxiety prevalence among preoperative patients attending Kirkuk hospitals and associated factors.

Objectives: To assess the anxiety level and identify the association between sociodemographic characteristics and patients' anxiety.

Method: A cross-sectional hospital-based study was conducted on 152 patients arranged for surgery at governmental hospitals of Kirkuk City by using a systematic random sampling procedure. Collecting data was performed from the 1st of January to the end of March 2023 by direct interview after informed consent was taken, and a proper questionnaire was used for the study. The data entry and analysis were done by using SPSS version 24(IBM STATA). Frequency percentage was used, and Chi-square was performed to assess the effect of association of variables. A p-value ≤ 0.05 was considered statistically significant.

Results: Among 152 patients, the anxiety level was 27(17.8%), and one-fourth of them 38(25%) were at age 40-49 years. This study divided the anxiety levels into high, medium, and low. The anxiety levels were significantly higher among males (p-value 0.04), who were illiterate (P=0.011), and businessmen (P=0.001). Interestingly, the history of surgery was not significantly associated with state anxiety (p-value 0.96), those diagnosed with hypertension disorders (P=0.021) reported the highest proportion of anxiety.

Conclusion: The level of anxiety showed nearly one-fifth, and the ratio of male: to female participants was 2:1, there was a significant association between the anxiety level and male

gender, illiterates, Businessmen, and people who hypertension diagnosis report the highest proportion of anxiety level.
Keywords: Anxiety, anesthesia, patients, surgery, study.

Introduction

Health was defined by the World Health Organization (WHO) and written into force in 1948 as physical mental and social well-being, notonly the absence of disease for this definition [1]. Anxiety can be defined as nervousness, an emotional state of fear, and threatening worry about events related to biological awareness that is complemented by agitation, difficulties in concentration, fatigue, and muscular strain [2]. The greatestnumber of patients expecting surgical treatment are worried; anxiety to some degree is a natural response to the potential and unpredictable threatening conditions at the preoperative time. An unnecessary stage of anxiety can upset treatment results, and this has been established in clients in diverse therapeutic situations.[3]. Preoperative time is an anxious occasion for surgical clients. Clients may take the day of surgery as the main and further most hazardous day in their life. The emotional indications of worry may be detected during the preoperative period, comprising irritability, increased tension, nervousness, hostility, security, and apprehension [4].

Comprehensive healthcare and consultation in many subspecialties by the Department of general surgery should provide, including emergencies, elective, and both carcinogenic and non-carcinogenic situations, offering surgical and non-surgical treatments affording the disease and condition of the patient. Therefore, the Department of general surgery is frequently performing several stressful situations and disorders. Anxieties like this often create various mental difficulties. While several features of preoperative anxiety in humans generally have been studied in neighborhoods such as Turkey [1], Egypt [2], Germany [3], and a few studies performed in Iraq [4,5] influences are not obvious in overall hospital inpatients.

The risk of patient anxiety identification by healthcare workers may be a significant factor to distribute the best care. For that, this aimed to identify the prevalence of anxiety and the association between sociodemographic characteristics and anxiety in patients admitted to the general surgery hospitals in Kirkuk City.

Objectives of the study: To identify the preoperative anxiety levels of surgical patients. To determine the sociodemographic characteristics. To find out the associations between some socioeconomic characteristics and anxiety levels.

Material and methods

A descriptive cross-sectional study was conducted. Assessing patients who were admitted to the general surgery department of Kirkuk and Azadi Teaching Hospital. Patients of any age, admitted for any reason, who planned to undergo surgery, from both genders; and informed consent to join the study was obtained. The proposal for the study subjects was approved by the ethical committee of the college and the hospital, confidentiality was used with each subject under the study.

Time: The present study started on the first of January and went on to the end of March 2023, at Kirkuk and Azadi Teaching Hospital.

Questionnaire: The questionnaire prepared by the researcher included sociodemographic characteristics (age, gender, education, marital status, and income) and variables related to study subject objectives (experiencing anesthesia and surgery, health problems, chronic diseases condition), expertise in the field of psychiatric, psychological, and the academic filed, correction was made according to their notes. For questionnaire reliability, Cronbach's

alpha was used to estimate the internal consistency for the level of anxiety scale which= 0.81. The data has been collected from an interview with patients before an hour of operation subsequently getting oral consent in the preparatory room.

Statistical analysis

Statistical analyses were performed using Statistical Package for the Social Sciences (SPSS), Version 24 (IBM Corp., Chicago, Illinois, USA). Variables are expressed as frequency distribution, mean ± standard deviations (SD), and Chi-square (χ^2) were used to identify the association between variables Fisher's exact tests were used for the comparison of continuous parametric variables. The statistical results were presented with a 95% confidence interval (C.I.). The differences were considered statistically significant if the p-value ≤0.05.

The income had been selected according to EASO (2020) [6] Kirkuk governorate alive on a once-a-month salary (income) between Iraqi Dinar (IQD) <500 000-750 000 (enough). While 25.9% received 250 000-500 000 IQD (not enough), 21.1 % had a once-a-month salary located <750,000-1,000,000 IQD (exceed enough), and 8.2 % of the Kirkuk governorate families graphed lived on a once-a-month salary lesser than 250,000 IQD (not enough). After being associated with other Iraqi cities advanced-salary families were additionally predominant in Kirkuk.

Inclusion criteria

Preoperative patients were prepared for surgery at any age to identify anxiety prevalence at both hospitals of Kirkuk City.

Ethical Committee: The Ethics Committee of Al-Qalam University College granted this study's ethical approval (No. 13B/4). Informed consent was provided by all participants during the period of the study. All participants who take part in this study were informed of confidentiality, even if they subsequently chose not to complete the surveys. Verbal consent was given by all the participants.

Results

In the recent study, a total of 152 samples were included, many of them 38(25%) were at age 40-49 years and the lowest rate was reported among 10-19 years old by 2%, consecutive patients found in the study sample. The mean ± SD age of the patients was 37±13.79years old and ranged from <10 to 50≥. 100 of the participants (65.8%) were males and 35(34.2%) were females. The highest rate was married 81(53.3%), and the lesser was widowed 11(7.2%). The university graduate of the study sample showed 62(40.8%), and less than that reported among those who finished primary school by 22(14.5%). The occupational status of the participants showed that 36(23.7%) were housewives and 3(2%) were unemployed. Among all respondents, 69(45.4%) lived in satisfactory conditions and 23(15%) lived in bad conditions. Socio-demographic characteristics are summarized in Table 1.

It appears from Table 2 that 107(70.4%) of them reported their first time of surgery, the others had previously made surgery, 16(10.5%) of them had previous health problems with anesthesia, 130(85.5%) did not show any family health problems with anesthesia, about 83(54.6%) of them had somehow fear from anesthesia, smokers and non-smokers showed equal proportions 63(41.4%), 58(38.2%) of them attended hospital for hypertension condition, 41 (27%) of patients reported neck / vertebra problems, 98 (64.5%) reported preferring general anesthesia operation, most of them didn't previously suffer from any health conditions such as a heart attack (84.2%), Musculoskeletal/ neuro (90.8%), anemia (87.5%), Sleep/Apnea problem (90.1%), and family history of chronic diseases (75.7%). Finally, the absence of alcohol consumption was reported among 137(90.1%) of the respondents. While the lowest rate of the respondents had made surgery with more than anesthesia (29.6%), 16(10.5%) experienced health problems related to anesthesia, 22(14.4%)

experienced issues related to anesthesia in their families, 27(17.8%) of them showed fears from anesthesia, 26(17.2%) were ex-smokers, 6(3.9%) were attended for ulcer/stomach diseases. Among 152 respondents only 27% of them revealed neck/vertebra health problems, 54(35.5%) preferred spinal anesthesia, 24(15.8%) showed previous heart attack, the musculoskeletal/neuro problem found among14(9.2%), 19(12.5%) anemia conditions, 15(9.9%) sleep/Apnea problems, family history of chronic diseases revealed among 37(24.3%), lastly, Alcohol consumption reported among 15(9.9%).

The study findings showed that among 100 male patients, the highest proportion of neutral anxiety responses was 60% and statistically a significant association (Table 3) was reported between them (P=0.04), out of 6 individuals who participated in the study 5(75%) of them reported fears from surgery and statistically a significant association reported between anxiety and occupational level (P=0.001). A statistically non-significant association was reported between the fear level and age (P=0.623), marital status (P=0.058), income (P=0.153), smoking (P=0.71), and Alcohol drinking (P=0.344) of studied samples.

Table 1: Sociodemographic characteristics of the study samples.

Variables	Characteristics	Frequency	(%)
Age (years)	**<10**	**6**	**(3.9)**
	10-19	**3**	**(2.0)**
	20-29	**37**	**(24.3)**
	30-39	**33**	**(21.7)**
	40-49	**38**	**(25)**
	50 or <	**35**	**(23)**
Gender	**Male**	**100**	**(65.8)**
	Female	**52**	**(34.2)**
Marital Status	**Single**	**42**	**(27.6)**
	Married	**81**	**(53.3)**
	Divorced	**18**	**(11.8)**
	Widowed	**11**	**(7.2)**
Educational status	**Illiterate**	**32**	**(21.1)**
	Primary	**22**	**(14.5)**
	Secondary	**36**	**(23.7)**
	University and above	**62**	**(40.8)**
Occupational status	**Housewife**	**36**	**(23.7)**
	Free Business	**11**	**(7.2)**
	Policeman	**12**	**(7.9)**
	Employee	**31**	**(20.4)**
	Student	**25**	**(16.4)**
	Businessman	**14**	**(9.2)**
	Manager	**14**	**(9.2)**
	Child	**6**	**(3.9)**
	Unemployed	**3**	**(2.0)**
Income	**Enough**	**69**	**(45.4)**
	Not enough	**23**	**(15.1)**
	Exceed Enough	**60**	**(39.5)**
Total		**152**	**(100.0)**

Table 2: Characteristics of the study sample.

Variables	Answers	F.	(%)
First time making an operation	Yes	107	(70.4)
	No	45	(29.6)
Experiencing problem/s related to anesthesia	Yes	16	(10.5)
	No	136	(89.5)
The family experienced issues with anesthesia	Yes	22	(14.5)
	No	130	(85.5)
Fear from anesthesia	Yes	27	(17.8)
	Maybe	83	(54.6)
	No	42	(27.6)
Smoking habits	Smoker	63	(41.4)
	Ex-smoker	26	(17.2)
	Non-smoke	63	(41.4)
The main reason for attending the hospital	Hypertension	58	(38.2)
	Asthma/Emphysema	30	(19.7)
	Kidney disease	17	(11.2)
	Thyroid problems	23	(15.1)
	Ulcer/stomach problems	6	(3.9)
	Others	18	(11.8)
Neck/vertebra problem	Yes	41	(27.0)
	No	111	(73.0)
Preferring surgery type	General anesthesia	98	(64.5)
	Spinal	54	(35.5)
Previous heart attack	Yes	24	(15.8)
	No	128	(84.2)
Musculoskeletal / neuro problem	Yes	14	(9.2)
	No	138	(90.8)
Anemia condition	Yes	19	(12.5)
	No	133	(87.5)
Sleep/Apnea problem	Yes	15	(9.9)
	No	137	(90.1)
Family history of chronic diseases	Yes	37	(24.3)
	No	115	(75.7)
Alcohol consumption	Yes	15	(9.9)
	No	137	(90.1)
Total		152	(100.0)

Table 3. Association between sociodemographic characteristics and anxiety level.

Variables	Features	High	Medium	Low	Total	P-value
		No(%)	No(%)	No(%)	No(%)	
Age	<10	5(83.3)	0(0)	1(16.7)	6(100)	0.623
	10-19	2(66.7)	1(33.3)	0(0)	3(100)	
	20-29	2(5.4)	21(56.8)	14(37.8)	37(100)	
	30-39	3(9.1)	18(54.5)	12(36.4)	33(100)	
	40-49	9(23.7)	20(52.6)	9(23.7)	38(100)	
	50 or <	6(17.1)	23(65.7)	6(17.1)	35(100)	
Gender	Male	19(19)	60(60)	21(21)	100(100)	0.04
	Female	8(15.4)	23(44.2)	21(40.4)	52(100)	
Marital Status	Single	13(31)	18(42.9)	11(26.2)	42(100)	0.058
	Married	13(16)	43(53.1)	25(30.9)	81(100)	
	Divorced	1(5.6)	13(72.2)	4(22.2)	18(100)	
	Widowed	0(0)	9(81.8)	2(18.2)	11(100)	
Educational Status	Illiterate	8(25)	19(59.4)	5(15.6)	32(100)	0.011
	Primary	4(18.2)	12(54.5)	6(27.3)	22(100)	
	Secondary	4(11.1)	13(36.1)	19(52.8)	36(100)	
	≤University	11(17.7)	39(62.9)	12(19.4)	62(100)	
Occupational Status	Housewife	4(11.1)	13(36.1)	19(52.8)	36(100)	0.001
	Free works	1(9.1)	8(72.7)	2(18.2)	11(100)	
	Policeman	1(8.3)	8(66.7)	3(25)	12(100)	
	Employee	7(22.6)	22(71)	2(6.5)	31(100)	
	Student	3(12)	13(52)	9(36)	25(100)	
	Businessman	4(28.6)	7(50)	3(21.4)	14(100)	
	Manager	1(7.1)	10(71.4)	3(21.4)	14(100)	
	Child	5(75)	0(0)	1(25)	6(100)	
	Unemployed	1(33.3)	2(66.7)	0(0)	3(100)	
Income	Good	11(15.9)	41(59.4)	17(24.6)	69(100)	0.153
	Poor	4(17.4)	16(69.6)	3(13)	23(100)	
	Medium	12(20)	26(43.3)	22(26.7)	60(100)	
Smoking habits	Smoker	9(14.3)	33(52.4)	21(33.3)	63(100)	0.71
	Ex-smoker	4(15.4)	17(65.4)	5(19.2)	26(100)	
	Non-smoker	10(20.8)	26(54.2)	12(25)	48(100)	
Alcohol consumption	Yes	4(26.7)	7(54.7)	4(26.7)	15(100)	0.344
	No	23(16.8)	76(55.5)	38(27.7)	137(100)	
Total		27(17.8)	83(54.6)	42(27.6)	152(100)	

This study showed that among 16 patients who experienced problems with anesthesia, 9(56%) individuals reported fear of surgery, statistically a significant association was revealed between them (P=0.001), among 54 patients those who prefer spinal anesthesia about 28(51.9%) doubt been fear from spinal anesthesia or not and, statistically a significant association revealed between them (P=0.04), among 37 patients have a history of chronic

diseases about one-fourth of 9(24.3%) reported a positive impact of anxiety to anesthesia and statistically a significant association revealed between the previous chronic diseases and the anxiety (P=0.023) subject, out of 58 patients diagnosed with hypertension disorder 13(22.4%) of them showed anxiety issues from anesthesia, and statistically a significant association revealed between the diagnosis of health problem and anxiety from anesthesia (P=0.021). Although, in the present finding statistically non-significant association was reported between anxiety from anesthesia and the number of been in the surgery room (P=0.616), family history of experiences problems with anesthesia (P=0.57), and health problems such as neck (P=0.55), heart attack (0.79), neurological/muscular (P=0.536), Table 4.

Discussion

Surgical operation is one of the fundamental reasons for fear and anxiety. The current study showed that among 152 patients the preoperative anxiety prevalence strongly was about one-fifth (17.8%) percent, and mildly among more than half (54.6%) percent, this study disagreed with other two studies in Ethiopia revealed that the prevalence of preoperative patients' mild anxiety was 53.6% [7] and 63% [8] respectively. Another study in Turkey [9] among 300 patients showed a different percentage (12.8%), [9] finally, a study in Amman [10] among 794 participants showed different results and reported that females had more worries than males (P<0,001) and statistically significant association reported between them. These differences are due to factors such as the study objectives, the sample size, and the design of the study. Besides family support to our community consider fundamental items that may affect the results.

The present study revealed that males were significantly (P=0.04) more anxious than females, a study conducted among 200 Turki patients [1] showed a statically significant association between males-females (P=0.026) in agreeing with the current study. in disagreement with our results, study [11] showed female anxiety and fear this may be due to the male gender revealing more than one-third of the sample size, at their age of forties and older, and didn't experience general anesthesia previously. Although a different finding resulted in the study of Turkey [9] which showed females had more worries showing than males and statistically, a significant association reported between them (24.62 ± 21.99) this is returns to females in Turkey have different lifestyles, education, and methodology of the study represented in the study.

The results of the findings revealed statistically a significant association (P=0.011) between the educational level and surgery anxiety showing its effect more among unschooled (≥ primary). This study agreed with another report [1] showed a statistically significant association between unschooled (P=0.001) and anxiety factor. Another study [7] showed that statistically there was a significant association between illiterate-elementary school (P≤0.001, P=0.01)and anxiety level. Although other studies show that statistically there was no significant association between education level and anxiety such as [10] among Covid-19 patients (n=794), and the prevalence of anxiety was nearly two-thirds percentage in high educational status, which is more than in illiterate [12] patients by one-fourth percentage.

This study reported a significant association between occupational level and anxiety item of the involved patients, the prevalence of anxiety was more among children (P=0.001) by three-fourth percentage. Unfortunately, no data was available to support these results or contradict them.

Table 4. Association between some variables and anxiety level.

Variables	Features	High	Medium	Low	Total	P-value
		No(%)	No(%)	No(%)	No(%)	
First-time anesthesia	Yes	17(15.9)	59(55.1)	31(29)	107(100)	0.616
	No	10(22.2)	24(53.3)	11(24.4)	45(100)	
Anesthesia problem Experiencing	Yes	9(56.3)	5(31.3)	2(12.5)	16(100)	0.001
	No	18(13.2)	78(57.4)	40(29.4)	136(100)	
Family history of experiences problems with anesthesia	Yes	5(22.7)	13(59.1)	4(18.2)	22(100)	0.527
	No	22(16.9)	70(53.8)	38(29.2)	130(100)	
Prefer Anesthesia Type	Spinal	15(27.8)	28(51.9)	11(20.4)	54(100)	0.04
	General	12(12.2)	55(56.1)	31(31.6)	98(100)	
Family of chronic diseases	Yes	9(24.3)	13(35.1)	15(40.5)	37(100)	0.023
	No	18(15.7)	70(60.9)	27(23.5)	115(100)	
Neck/Vertebra Problems	Yes	5(12.2)	24(58.5)	12(29.3)	41(100)	0.55
	No	22(19.8)	59(53.2)	30(27)	111(100)	
Heart attack/Angina	Yes	4(16.7)	12(50)	8(33.3)	24(100)	0.79
	No	23(18)	71(55.5)	34(26.6)	128(100)	
Neurological/Muscular diseases	Yes	1(7.1)	9(64.3)	4(28.6)	14(100)	0.536
	No	26(18.8)	74(53.6)	38(27.5)	138(100)	
Anemia problems	Yes	3(15.8)	13(68.4)	3(15.8)	19(100)	0.385
	No	24(18)	70(52.6)	39(29.3)	133(100)	
Sleep problems	Yes	2(13.3)	7(46.7)	6(40)	15(100)	0.206
	No	25(18.2)	76(55.5)	36(26.3)	137(100)	
Health problem (Diagnosis)	Hypertension	13(22.4)	26(44.8)	19(32.8)	58(100)	
	Asthma/ Emphysema	3(10)	14(46.7)	13(43.3)	30(100)	0.021
	Kidney disease	0(0)	16(94.1)	1(5.9)	17(100)	
	Thyroid problems	4(17.4)	12(52.2)	7(30.4)	23(100)	
	Ulcer/stomach problems	0(0)	5(83.3)	1(16.7)	6(100)	
	Others	7(38.9)	10(55.6)	1(5.6)	18(100)	
Total		27(17.8)	83(54.6)	42(27.6)	152(100)	

The current study revealed that experiencing anesthesia problems statically had a significant association with anxiety factor (P=0.001) which represented more than half a

percent. The current findings agreed with a study done [10] in Jordan the city of Amman (P=0.005). Another study [7] showed that there was a non-significant association between previous surgical anesthetic operation and anxiety level (P=0.34) in Debre Behran/Ethiopia, this may be due to the large sample size (n=330) besides the lifestyle differences from our study and finally, the objective of both studies differs.

The highest proportion of patients with spinal anesthesia preferred showed doubt and anxiety about the anesthesia type and statistically a significant association was reported between them (P=0.04).The current study was in agreement with a descriptive hospital-based study conducted among 300 patients [9] in Turkey (P=0.001). Another study disagreed with current research in Nepal and reported a statistically non-significant association between the anesthesia planned type and anxiety level [12] the reasons were clearly due to the small sample size, particularly adults, two-thirds of them females, gynecology cases involved, and finally specific diagnosis was selected in the previous research.

The present study reported a statistically significant association between the presence of family chronic diseases and anxiety prevalence (P=0.023).The current study was in agreement with another study conducted among 40360, a population-based retrospective cohort study to examine the associations of diagnosed depression, anxiety, and comorbid depression which should have the highest proportion of anxiety depression among women significantly.[13]

Finally, in the current study, there was a statistically significant association between the present health problems of the participants and the anxiety disordered (P=0.021), hypertension was reported as the highest proportion of severe anxiety disorder, and stomach diseases were reported as the highest proportion of the mild anxiety problems. Even emergency trauma showed the highest proportion of cases admitted to Turkishhospitals[1]yet there was a statistically significant association between the cases of patients admitted to the hospital and anxiety (P=0.043) the causes may be due to post-traumatic stress disorder (PTSD), which made fears from operation failing, disabilities, or may to deaths. Another study [10]reported a statistically non-significant association between the diagnosis of the problems the patients admitted for making surgeries and anxiety level (P=0.056) the causes may be due to the huge sample size and other factors mentioned previously.

Strengths and limitations

Strengths

This is the first study in Iraq to shed light on this topic. It provided us with valuable information about the prevalence of preoperative anxiety and its related factors among surgical patients in two Iraqi hospitals.

Limitation

The study did not include emergency surgery patients and groups of young patients due to the difficulty of cooperation and problems resulting from common forms such as pain and accidents. The patients were interviewed once and our facilities did not allow us to meet them again after we gave them information about surgery and anesthesia, so we did not know whether pre-operative anxiety became less or not. The study also did not measure the level of anxiety before hospitalization.

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Ethical approval: The proposal for the study subjects was approved by the ethical committee of the college and the hospital, confidentiality was used with each subject under the study. Informed consent was taken from each participant before his/her enrollment in the study.
Authorship contributions: - All the process of the current study was completed by the researchers. Dr Bestoon collected the data and make the inter to SPSS, Dr Hayman Analyzed the data, found the correlations between the variables, and data analyses, wrote the manuscript draft by Dr Hayman, and the final evaluation of the draft was performed by Dr Bestoon.
Conflict of interest: We have no conflict of interest to declare.

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