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Research Article

**PREOPERATIVE ANXIETY AND INTRAOPERATIVE
ANESTHETIC REQUIREMENTS**

Running Title: Anxiety And Anesthesia

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INTRODUCTION:

Anxiety is “a transitory emotional condition consisting of feelings of tension, apprehension, nervousness, fear and high autonomic nervous system activity” [1of1]. Surgery is a treatment strategy that involves pain, bleeding, morbidity and sometimes the risk of death [2]. Surgical procedures cause anxiety in patients [2of1], the prevalence of pre-operative anxiety was reported to be high and ranged between 60% to 90% [2of2]. Pre-operative anxiety is an important issue that has been studied in recent years [1of1], as the pre-operative anxiety may result in adverse effects such as difficult anesthesia, pain, post operative management such as longer hospitalization and prolonged recovery [4of1,3of2]. The increase in the anxiety level is associated with increasing in the need of anesthesia [4of2]. It was reported that patients experienced anxiety one week before the procedure [2of1], another study showed that 75% of patients experienced anxiety at the moment they were told about the procedure [1of1]. The main cause of anxiety is anesthesia which represents 62% of reasons and this in case of non-life-threatening procedure, while the anxiety of surgery itself represented 15% [3of1]. One of factors that may cause the anxiety is the lack of information about the anesthetic procedure [4of1], other factors include fear of complications, physical injury, pain and death [5of2,6of2]. The present study was performed to assess the anesthetic anxiety pre-operatively and its associated factors.

Subjects and methods:

This study was conducted on patients during the period from September 2018 to November 2018. The study was conducted using an online survey, the survey included 2 parts of questions, the first part to investigate demographics and the second part to assess the anxiety of patients. SPSS program was used to analyze data, number and percent were used for demographics, while mean and SD were used to represent the score of anxiety, $P\text{-value} \leq 0.05$ was considered significant.

RESULTS:

The present study included 400 participants, males were more dominant than females 207(51.8%) Vs 193(48.2%) respectively. Those with age range of 41-50 years old represent the dominant age group 179(44.7%), there were 210(52.5%) from rural areas and the majority were working 390(97.5%). Few number of participants were smokers 79(19.7%) and fewer number were doing exercise 28(7%), demographics of participants are shown in table1.

The total mean score \pm SD of anxiety was 7.3 ± 1.2 , the mean score of each questions that assess the

anxiety is shown in table2. Higher score of anxiety was reported regarding the waiting time for the procedure (8.2 ± 0.2), discover the results of the process (7.8 ± 0.6), vomiting and nausea after surgery (7.7 ± 1.5), lack of knowledge of what happens to you (8 ± 0.5), physical or mental injury after operation (9.4 ± 0.6), uncertainty of anesthesia (9.8 ± 0.4) and awareness during anesthesia (9 ± 0.2).

The correlations between demographics and the total mean score of anxiety are shown in table3. There were a significant correlations between mean score of anxiety and each of gender ($P\text{-value} = 0.005$), age (0.007), residency ($P\text{-value} = 0.02$) and educational level ($P\text{-value} = 0.01$).

DISCUSSION:

The present study showed that there was high level of anesthesia anxiety among participants, the mean score of anxiety was 7.3. One study [2] reported high preoperative anxiety mean score 18.2. A previous study [1] showed that higher percent of patients (over 77.5%) were suffering anxiety related to anesthesia. Another study [1of1] reported pre-operative anxiety prevalence of 76% related to anesthesia. Our study revealed that the most common events and cause results in anxiety were waiting time for the procedure, discovering the results of the procedure, vomiting and nausea after surgery, lack of knowledge of what happens in surgery, physical and mental injury after surgery, uncertainty of anesthesia and awareness during anesthesia. The latter two reasons had higher mean score 9.8 and 9 respectively and this indicated that anesthesia represent the main cause of anxiety before operation. Previous study [1] reported that fearing of nausea, vomiting, awareness during anesthesia and pain were prevalent among 50.6%, 55.5%, 64% and 64.7% respectively. However, one study [2] demonstrated that anxiety about surgery was higher than that of anesthesia among patients. The current study found that there were several factors associated with increased the level of anxiety, including female gender, older age, living in rural areas and low educational level. All the previous factors except for female gender can be associated in turn with of level of awareness, however the anxiety can be decreased by increasing awareness among patients pre-operatively. Our study revealed that work, nationality, smoking status and exercise had no significant influence on the level of anxiety. It was reported that anxiety was higher among younger patients [1of1], another study [2] also reported that young patients experienced higher anxiety than older ones however our study showed the reverse, and other study [03] reported that the mean score of anxiety didn't differ among different age groups. The

anxiety level reported in females was significantly higher than that reported in males in several studies [1, 1of1,11of, 19of1]. Another study [2] reported the same findings, however one study [03] showed that there was no significant difference between the mean score of anxiety between males and females. Education level was found to be significant factor associated with anxiety, those with higher education level (higher than diploma) had higher anxiety level [1] and this was in contrast with our findings. In contrast to our results, education was reported to have no influence on the anxiety, whereas in agreement with our findings, work had no significant influence on anxiety level. It can be understood that the factors that affect anxiety level vary in different communities and different study groups.

Strength points and limitations of the study:

The strength points of the study including; the survey was available on internet so no obligation to participate in the study, the survey also was simple, so anyone can participate, however the survey wasn't standard survey, so it was hard to compare more results with previous studies.

CONCLUSION:

There was a high level of anxiety among participants and this may negatively affect the procedure outcomes. There were several factors associated with anxiety, some factors can't be controlled such as sex as females had higher level of anxiety than men, however increasing education and providing information about the nature of the procedure and its predicted results simply as well as anesthesia can decrease the fear and anxiety of patients.

Disclosure Statement: The authors have nothing to disclose

Conflict of interest: No

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Table1: Demographics of participants

Characteristics	N(%)
Gender	
Male	207(51.8%)
Female	193(48.2%)
Age	
20-30	74(18.5%)
31-40	100(25%)
41-50	179(44.7%)
>50	47(11.8%)
Residency place	
Rural	210(52.5%)
Urban	190(47.5%)
Education level	
Primary/ prep/ high school	100(25%)
University and higher	300(75%)
Work	
Yes	390(97.5%)
No	10(2.5%)
Nationality	
Saudi	380(95%)
Non-Saudi	20(5%)
Smoking	
Yes	79(19.7%)
no	321(80.3%)
Exercise	
Yes	28(7%)
no	372(93%)

Table2: The mean score of anxiety regarding different anxiety aspects

Questions	Mean score \pm SD
The degree of anxiety in these situation:	
The waiting time for the procedure	8.2 \pm 0.2
During the pre - operation medical examination	4.7 \pm 1.2
Discover the results of the process	7.8 \pm 0.6
Postoperative surgery pain	5.7 \pm 0.7
Lack of rest after surgery	6.9 \pm 0.4
Vomiting and nausea after surgery	7.7 \pm 1.5
Lack of knowledge of what happens to you	8 \pm 0.5
Physical or mental injury after operation	9.4 \pm 0.6
Uncertainty of anesthesia	9.8 \pm 0.4
Awareness during anesthesia	9 \pm 0.2

Table3: Correlations between mean score of anxiety and demographics

Characteristics	Anxiety mean score	P-value
Gender		0.005
Male	5.8±0.4	
Female	6.9±0.2	
Age		0.007
20-30	5.5±0.4	
31-40	5.7±0.7	
41-50	6.8±0.7	
>50	7.4±1.2	
Residency place		0.02
Rural	7.8±0.9	
Urban	6.3±0.5	
Education level		0.01
Primary/ prep/ high school	8.5±1.4	
University and higher	6.7±0.2	
Work		0.01
Yes	8.5±1.4	
No	6.7±0.2	
Nationality		0.08
Saudi	7.7±0.4	
Non-Saudi	7.4±0.3	
Smoking		0.09
Yes	6.9±0.5	
no	6.8±0.4	
Exercise		0.7
Yes	6.6±0.01	
no	6.2±0.2	