

# Different Dental Procedures Resulting Anxiety among patients: A Cross Sectional Study

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## ABSTRACT

**Background:** In the modern era of medical practice, dental field is a place full of stress, depression and anxiety among both dentists and patients that exert a bad effect on their performance as well as psychosocial well-being.

**Aim:** To determine the prevalence of anxiety (by DASS scoring system) associated with dental treatments among patients.

**Study Design:** Cross-sectional study.

**Methodology:** This study with enrolled patients (n=452) was carried out after research ethical committee's approval at orthodontic clinic, Dhahran, Saudi Arabia. Both male and female patients were enrolled. Different levels of anxiety among them were noted after filling DASS questionnaire profoma. Data was analyzed by SPSS version 22. If the normality and equal variance assumption were satisfied, the difference in mean of anxiety scale scores was tested by using a t-test given demographic variables such as gender, educational level and frequency of visits as p-value  $\leq 0.05$  was considered significant.

**Results:** The mean age of all the enrolled subjects was  $45.5 \pm 1.6$  with the range of 20 to 70 years. Moderate dental anxiety of the study population had a mean DAS-R of  $(10.4183 \pm 4.23621)$  with p-value of  $> 0.05$ .

**Conclusion:** We concluded that anxiety with insignificant difference was noted between both genders associated with dental treatments.

**Keywords:** Dental procedures, Anxiety and DASS system.

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## INTRODUCTION

Dental field is a place full of stress, depression and anxiety among both dentists and patients that exert a bad effect on their performance as well as psychosocial well-being. Patients are easy target for many mental diseases like depression, anxiety and stress due to multiple factors like fear of dental procedure, environmental changes, less awareness about procedures and other life challenges<sup>1,2</sup>. Dental anxiety has been recorded as a wide spread problem. It is the main reason of the avoidance of dental care, resulting in bad oral health care. Dental anxiety is concenter to be a problem for both patients and dental care providers<sup>3</sup>.

The level of anxiety was compared between genders and the average dental anxiety score for males and females, 7.96 and 9.52 respectively. In addition, the prevalence of dental anxiety was high and there is a significant difference between gender and dental anxiety. The dental anxiety was higher among females than males<sup>4</sup>. Consider to dental anxiety and relation to various types of dental treatment, the most major procedures that are concern to be more anxiety are extraction and root canal therapy. Some previous studies found that the x-ray concern to be less anxiety. One previous study revealed the levels of anxiety among various treatments, in this study the highest dental anxiety level was in patients who had root canal treatment as the first dental appointment<sup>5</sup>.

Educational level is one of demographic factors of dental anxiety. The prevalence of dental anxiety and fear amongst patients referred to Isfahan dental school, Iranian .They found that there is no relationship between educational level and dental anxiety and fear<sup>6</sup>.

Literature review has revealed there is increase in prevalence of anxiety among dental patients globally

undergoing dental procedures but limited data is available among Saudi patients. In the light of this increasing burden of anxiety among our Saudi dental patients, we planned this present study to determine to determine the prevalence of anxiety (by DASS scoring system) associated with dental treatments among patients. It helped us in assessing these mental health issues among them so that they can be properly managed in-order to reduce this mental burden.

## METHODS

This cross sectional study was carried out after research ethical committee's approval at orthodontic clinic, Dhahran, Saudi Arabia. Both male and female patients were enrolled. Different levels of anxiety among them were noted after filling DASS questionnaire profoma. The sample size of 452 was calculated using WHO software taking confidence level equal to 95% and margin of error equal to 7%. Subjects who did not give informed consent and had any serious illness were ruled out of the project. Informed and written consent was taken. Level of anxiety among them were noted after filling DASS questionnaire profoma<sup>7</sup>.

**Statistical Analysis:** The data were analysis by using SPSS 22. Frequency and percentage were given for gender, age groups, educational status and anxiety status. If the normality and equal variance assumption were satisfied, the difference in mean of anxiety scale scores was tested by using a t-test and f-test according to the given demographic variables such as gender, educational level and frequency of visits as p-value  $\leq 0.05$  was considered significant. If the assumption is not met, then a non-parametric test was used to find significance (Wilcox on rank-sum test etc).

## RESULTS

The mean age of all the enrolled students was  $45.5 \pm 1.6$  with the range of 20 to 70 years. Frequency and percentages (%) were given for gender, age groups and study status for enrolled subjects in table-1.

Patients having anxiety in the current study are shown in table-2. In current project, results showed that the prevalence of moderate dental anxiety of the study population had a mean DAS-R of  $(10.4183 \pm 4.23621)$ .

In our study, concerning the level of education (table-3) showed statistically significant differences between the educational level ( $p=0.001$ ). In current project, results showed that the percentage of high fear action for different dental procedures. Teeth extraction was the most frequent dental procedure causing high fear (45.60%). Root canal treatment was the second frequent procedure causing high fear followed by injection of anesthesia (44% and 37.80%, respectively) as shown in table-4.

The relationship between gender and fear of different dental procedures was shown in table-5 with p-value. There was significant relation between gender and fear of procedures like extraction, RCT and injection.

Table 1: Demographic Parameters Of Enrolled Patients (n=452)

Variables	Categories	Frequency	%age
Gender	Male	166	36.72
	Female	286	63.27
Educational status	Less than intermediate	34	7.5
	Intermediate	37	8.2
	Secondary	147	32.5
	Academic	234	51.8
Age groups (years)	21 - 40	345	76.3
	41 - 60	63	13.9
	More than 60	44	9.7

Table-2: Prevalence of Anxiety & Relation between DAS-R and Gender

Variables	Categories	Frequency	%age
Anxiety	Normal	154	34
	Mild	124	27.4
	Moderate	52	11.5
	Severe	122	27
Mean DAS-R	Males	Females	Total
	10.0994±4.52521	10.7372±3.94703	10.4183±4.23621

P value 0.12

Table-3 Relation between educational level and DAS-R score

Variable	Categories	Patients	
		n	Mean±SD
Educational status	Less than intermediate	34	10.85±5.5
	Intermediate	37	12.11±4.8
	Secondary	147	11.23±4.3
	Academic	234	9.80±3.7

P value 0.001\*

Table 4: Percentage of high fear for different dental procedures (Descending)

Procedures	Frequency	%age
Extraction	206	45.60
RCT	199	44
Injection	171	37.80
Scaling	119	26.30
Pain from air syringe	115	25.40
Injured	100	22.10
Probing	99	21.90
Panic attacks	52	11.50
X-rays	37	8.20

Table 5: Relation between Gender and Dental procedures

Variable	Categories	Males		Females		p-value
		n	%	n	%	
Extraction	Low	24	46.2%	28	53.8%	0.000*
	moderate	51	45.5%	61	54.5%	
	high	50	24.3%	156	75.7%	
	No\don't know	14	35.9%	25	64.1%	
RCT	Low	26	40.0%	40	60.60%	0.000*
	moderate	53	52.0%	49	48.0%	
	high	48	24.1%	151	75.9%	
	No\don't know	17	38.6%	27	61.4%	
Injection	Low	31	43.7%	40	56.3%	0.01*
	moderate	58	41.7%	81	58.3%	
	high	44	25.7%	127	74.3%	
	No\don't know	6	33.3%	12	66.7%	
Probing	Low	43	37.4%	72	62.6%	0.62
	moderate	48	35.6%	87	64.4%	
	high	37	37.4%	62	62.6%	
	No\don't know	14	27.5%	37	72.5%	
Scaling	Low	49	41.9%	68	58.1%	0.10
	moderate	55	35.3%	101	64.7%	
	high	32	26.9%	87	73.1%	
	No\don't know	8	42.1%	11	57.9%	
X-rays	Low	95	34.1%	184	65.9%	0.71
	moderate	26	38.2%	42	61.8%	
	high	12	32.4%	25	67.6%	
	No\don't know	9	45.0%	11	55.0%	

## DISCUSSION

In previous studies, dental anxiety has been frequently reported to vary with gender, age and educational level<sup>8</sup>. In this study, the relation between patients' socio-demographic factors (including age, gender and education) and DAS-R scores was surveyed the result of the study showed no statistically significant difference in anxiety level between males and females in DAS-R, like several studies that have reported similar findings<sup>9</sup>. In contrast of other studies there was significance different between them, that have usually found women to have more dental anxiety than men. In addition, the prevalence of dental anxiety was high and there is a significant difference between gender and dental anxiety. The dental anxiety was higher among females than males<sup>4</sup>.

Consider to dental anxiety and relation to various types of dental treatment, the most major procedures that are concern to be more anxiety are extraction and root canal therapy<sup>10</sup> and some previous studies found that the x-ray concern to be less anxiety, which is in line with our study. One study reported that the extraction has the highest report of dental anxiety level, and the lowest report was who had a prophylaxis at their last dental visit.<sup>11</sup> In the current study, the relationship between gender and fear of various dental treatments (anesthesia feeling, probing, scaling) had shown no significant difference between them which was in accordance with previous study<sup>10</sup>.

Almost half of the sample 37.8% was afraid of anesthesia injection. A statistically significant difference was found between males and females with the females showing a higher degree of fear 73.3% compared with males 25.7%, which is accordance with previous studies<sup>12</sup>.

## CONCLUSION

We concluded that the KFMMC population has a moderate dental anxiety with no significant difference between genders. Also, it was found that the population with intermediate level of education had a higher dental anxiety score. Extraction and root canal treatment were the dental procedure with higher dental anxiety among KFMMC patients, while the x-ray has the lowest dental anxiety. Future studies are required to evaluate the reasons that lead to the development of these mental issues among our patients. Only then the preventive measures can be done to minimize the overall burden of these stressors among our population.

**Limitations:** Our study has number of limitations as we failed to assess the causes for depression and anxiety,

memory skills and stress hormones levels. Other limitations included time as well as financial constrains and lack of resources.

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