

# ANXIETY RELATED TO DENTAL PROCEDURES AMONG THE STUDENTS OF A DENTAL COLLEGE

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## ABSTRACT

*The objective of the study was to determine level of dental anxiety related to dental procedures in dental students and comparing the dental anxiety between male and female undergraduate dental students of Rawal Dental College.*

*This cross-sectional study was conducted at Rawal Dental College, Islamabad, Pakistan during October 2016. A validated Corah Dental Anxiety Scale (DAS) questionnaire were distributed among dental students in first, second, third and fourth year students present at the day of study. There were four questions with five options in this scale that assess level of anxiety. Total score ranged from 4-20. This was total of all points of scale items. The score 8 or below 8 showed no anxiety, 9-12 showed moderate level of anxiety, 13-14 showed high level of anxiety and 15-20 showed severe level of anxiety. Chi-Square Test used to determine level of anxiety and Mean Anxiety Score between male and female students. Mean and Standard Deviation of gender was calculated by independent T test and that of Academic classes of dental students were calculated by one-way ANOVA.*

*Results showed female students presented with higher mean anxiety score as compared to male students. The difference was statistically insignificant (P-value = 0.10). Dental anxiety reduced from first year to final year.*

*Female students had more high to severe level of anxiety as compared to male students. Mean and standard deviation of Mean anxiety score was calculated i.e. 9.11 ±3.15.*

**Key Words:** *Corah Dental Anxiety Scale, Dental anxiety, Stress, Dental Anxiety Score (DAS), Dental Fear, Dental Students.*

## INTRODUCTION

Anxiety is an imaginary threat about unknown and unfamiliar process. A patient's reaction to tension that occurs specifically during the dental treatment known as Dental Anxiety (DA). It is graded fifth amongst common phobia or fear. A study was conducted that

showed 6-15% of the study subjects had high level of dental anxiety related to dental procedures. It is a determining factor of whether people will make regular or irregular dental visits to the dentist, access or a substantial hurdle to dental care.<sup>1</sup> Dental anxiety is believed to start in early age<sup>2</sup> highest in middle age, and decreasing with old age and social status.<sup>1,3</sup> Anxious patients delay visit to dental care till it becomes absolutely necessary. They have poor oral hygiene as compared to non-anxious patients and this poses severe threat to general health of patients.<sup>4</sup> Negative dental experiences in younger age influence dental fear in adulthood. Oral health education should be addressed in university students to reduce dental fear.<sup>5</sup> Dental students are future front line health care providers. It is necessary to learn about the techniques that can help the students to overcome their own dental anxiety.<sup>6</sup>

Dentistry has been associated with high level of stress. In recent years stress or dental anxiety among

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the dental students have received much attention. A negative association has been stated between anxiety and academic performance of dental students. Reducing their anxiety levels would make them more confident practitioners, who could in turn treat their patients efficiently.<sup>7</sup> Dental students fearful themselves could pass on their anxieties to their patients which will contribute an overall increase in the prevalence of dental anxiety.<sup>8,9,10</sup> Females were found to be the most effective interpreter of dental anxiety, related to dental procedures. Females university students was found to have higher rate of dental anxiety.<sup>5</sup> Occasional visits to the dental care, the prolonged wait on the dental chair, former bad dental experiences in dental clinics, the form of treatment received, how aggressive and invasive the treatment and pain in the course of dental treatment are the conditions that predicts dental anxiety in females.<sup>11,12,13</sup> This study was aimed to find out the level of dental anxiety among dental students related to the dental procedures.

## METHODOLOGY

This cross-sectional study was conducted at Rawal Dental College, Islamabad, Pakistan during October 2016 after approval of Ethical Committee of the college. Self-reported questionnaire Corah's Dental Anxiety Scale (DAS) was used in this study. Four questions each with five answers in each question, in numbers (1-5). Extreme total of numbers is 20. The ultimate anxiety is calculated by the total of numbers, for each question. A score of 8 or below 8 specify mild level of anxiety; score of 9 to 12 specify moderate level of anxiety, score of 13 and 14 specify high level of anxiety, score of 15 till 20 specify severe level of anxiety.

A total of 138 students from Rawal Dental College completed the questionnaire at the end of their respective lectures and clinical sessions. Students included from all the four years of study; 45 from first year, 33 second year, 26 third year and 34 fourth year. No attempt was made to obtain responses of students that were absent on the study day. Data were analyzed by SPSS v20. Mean and Standard Deviation were calculated for total sample, gender and between the classes of dental undergraduate students. The types of procedure related dental anxiety were compared in males and females using chi-square test. Using student's T test, Mean anxiety Score (MAS) were compared for different parameters. This was found to be statistically significant. ( $P < 0.05$ )

## RESULTS

In this study, out of 138 students majority were females (88 females and 50 males). They are divided into two age groups. Majority of students amongst the two age groups were in 21-26 years age group (73.2%) followed by 18-20 year age group (26.8%). Mean age of participants was  $21.3 \pm 1.37$  years. Students of first year were 45 (36.2%), 33 (23.9%) of second year, 26 (18.8%) students of third year and 34 (24.6%) students of fourth year. Mean and standard deviation of Mean anxiety score was calculated i.e.  $9.11 \pm 3.15$ .

Four questions of Dental Anxiety Scale DAS were asked from dental undergraduate students. In response to Question 1 of DAS in which 30.4% students reported that they reasonably enjoy the experience when they go to the dentist for check-up, 29% felt little uneasy, 24.6% would not care, 10.9% afraid and 5.1% reported that they were very frightened of what the dentist would do to them. In response to Question 2 of DAS

TABLE 1: SHOWS COMPARISON OF ANXIETY LEVEL BETWEEN MALES AND FEMALES

Variables	Male (N=50)	Female (N=88)	P-value
Mild anxiety	30 (60%)	34 (38.6%)	0.048
Moderate anxiety	16 (32%)	33 (37.5%)	
High anxiety	3 (6%)	14 (15.9%)	
Severe anxiety	1 (2%)	7 (8%)	
Dental Anxiety Mean $\pm$ SD	$8.2 \pm 2.81$	$9.62 \pm 3.23$	0.10

TABLE 2: SHOWS COMPARISON OF ANXIETY LEVEL BETWEEN DIFFERENT CLASSES OF DENTAL STUDENTS

Variables	1st year	2nd year	3rd year	4th year	P- value
Mild anxiety	17 (37.8%)	16 (48.5%)	15 (57.7%)	16 (47.1%)	0.188
Moderate anxiety	18 (40%)	13 (39.4%)	8 (30.8%)	10 (29.4%)	
High anxiety	5 (11.1%)	3 (9.1%)	1 (3.8%)	8 (23.5%)	
Severe anxiety	5 (11.1%)	1 (3%)	2 (7.7%)	0 (0%)	
Mean Anxiety Score Mean $\pm$ SD	$9.51 \pm 3.34$	$8.76 \pm 2.86$	$8.58 \pm 2.95$	$9.32 \pm 3.35$	0.56

in which 39.9% students reported that they feel little uneasy when they wait in dentist's office for their turn, 33.3% feel relaxed, 13.8% felt tense and 13% reported that they felt anxious.

In response to Question 3 of DAS in which 31.2% students reported that they feel little uneasy when they wait on dental chair and dentist starts the work on their teeth with drills, 24.6% felt tense, 23.9% anxious, 19.6% feel relaxed and 0.7% reported that they felt so anxious.

In response to Question 4 of DAS in which 49.3% students reported that they feel little uneasy when dentist start using the instruments on their teeth and around the gums to scrap of the debris attached to the teeth surfaces, 25.4% feel relaxed, 13% felt anxious and 12.3% felt tense. In present study level of anxiety were compared between males and females. It was noted that females had significantly higher to severe level of anxiety ( $P= 0.04$ ). Table 1. When anxiety level were compared between different classes no statistically significant difference was observed in the level of anxiety among different classes of students ( $P= 0.18$ ). Table 2.

## DISCUSSION

In modern dentistry although the technical advances made, anxiety related to dental treatment and pain related with it, remains predominant. Dental anxiety can have its impact on a person's life and undesirable consequences, such as sleep complaints, losing confidence, and emotional problems. Most important patient avoids to go to dental care.<sup>1</sup>

In this study, females were more predominant than males. Females shows more level of anxiety as compared to males. There was statistically significant difference between the gender and level of dental anxiety.

In 2014, Farooq studied that DAS was higher in female than in male dental students.<sup>4</sup> Male hide their fear due to predictable gender role that also has been reported previously by Pierce and Kirkpatrick.<sup>4,14,15</sup> In 2002, a study conducted by Ministero della showed that dental anxiety conditions are prevailing more in females as compared to males.<sup>11</sup> Al-Omari studied women having highest dental anxiety scores than men. This difference, between the genders was slightly insignificant.<sup>6</sup> Severe level of dental anxiety are more commonly found in women and this was consistent with our study, while in another study there was insignificant difference in dental anxiety in gender.<sup>3,16</sup> Patients who are anxious postpone their dental visit ( $P = 0.0008$ ).<sup>16</sup> Studies showed that 25 and 26 year-olds patients likely to suffer higher dental anxiety. This is due to number of psychological or emotional reasons in this age. This ultimately brings higher dental anxiety in patients of younger age.<sup>3,4</sup>

In this study, preclinical dental students of first and second year showed more mild level of anxiety while clinical dental students of third and fourth year showed more high and severe level of anxiety. However, level of anxiety and mean anxiety score in different classes of student was not statistically significant. These findings were in agreement with the study conducted by Donka in 2011, where Mean anxiety score was higher in first year students than the other years of study. This shows that young students experienced more anxiety due to dental treatment in junior students. The results of this study was fully consistent with the results of other studies. Level of dental anxiety decreasing with following year of study.<sup>3,17</sup> Decrease in level of anxiety can be due to, the better understanding and education, their trained and learned clinical knowledge of students.<sup>17,18</sup> In another study that showed, DAS scores decreased from the 3rd to the 6th year students and significantly between females, while in males levels of anxiety persisted within close range throughout all the years of study.<sup>7</sup> This was consistent with our study that females showed more high and severe level of anxiety from 3rd and 4th year while males showed same level of anxiety in 3rd and 4th year. In another study, students of first and final year of study identified with higher level of anxiety.<sup>19</sup>

Dentists should be encouraged to assess the dental fear of their patients before treatment.<sup>20</sup> Dental anxiety is relatively decrease or even be totally lost if pain is managed in appropriate manner. However in surgical or invasive dental treatment, augmenting the knowledge of the treatment, improved skilled education and clinical knowledge that students gain in their studies in dental school. Through these efforts, dentist can decrease and avoid the dental anxiety in patients and students during dental treatment in dental care.<sup>3,18</sup> The potential shortcoming of this study was small sample size.

## CONCLUSION

Female students have more high to severe level of anxiety as compared to male students. Clinical education of dental training and graded exposure therapy helps in the reduction of dental anxiety related to dental procedures.

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#### CONTRIBUTIONS BY AUTHORS

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|---------------------------|--|
| <b>1 Quratulain Khan:</b> | Conception and design, drafting of manuscript. |
| <b>2 Nouman Noor:</b>     | Critical revision.                             |
| <b>3 Rabia Qamar:</b>     | Collection of data.                            |
| <b>4 Manzoor Ahmed:</b>   | Critical revision.                             |
| <b>5 Saleem Abbasi:</b>   | Analysis & interpretation of data.             |