

# Assessment of Dental Anxiety Levels among Students of Medical and Dental Sciences



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## ABSTRACT:

**Objective:** This study was designed to look in the subjective ratings of dental anxiety levels among health care students (both dental and medical students) of a public sector University hospital and explore the difference in terms of their age, gender and their health related field of study.

**Methodology:** A cross sectional study was conducted on medical and dental students of Dow University of Health Sciences, Karachi (n=315). Dental anxiety level of the study participants was evaluated by using Modified Dental Anxiety Scale (MDAS).

**Results:** Two hundred (n=200) participants completed the questionnaire with 63.5% response rate. Out of the total 59% belonged to dental whereas 41% belonged to medical field. Only 3% of the total was observed to have mean anxiety score of < 5. On the other hand majority (90%) suffered from slight-to-fair anxiety and only 7% were observed as dental phobic (extreme anxiety). Statistically significant differences ( $p < 0.05$ ) in ranked mean anxiety scores were observed according to gender, age group and field of study differences respectively.

**Conclusion:** It was concluded from the present study that female dental students of age group  $\leq 21$  years scored higher dental anxiety scores than medical male counter group of same age group. Particularly females were found to be more fearful of local anesthesia injection.

**KEYWORDS:** Dental Anxiety, Medical students, Dental students.

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## INTRODUCTION

Although ‘dental anxiety’ and ‘dental phobia’ are the terms interchangeably used, but based on their population based prevalence it must be noted that

there may be a difference between the two terms. Researchers have found that dental anxiety is more prevalent (20%) among general population than dental phobia (5%)<sup>1</sup>. When it comes to any kind of advice in terms of dental problems being followed by the patient, it becomes the worst barrier for the dental care professionals. By definition dental anxiety is known as fear of visiting a dentist for any sort of dental procedures; whereas phobia is an extreme level of fear or anxiety. The presence of elevated levels of such an anxiety or fear amongst patients brings about negativity towards dental treatment that could be accomplished efficaciously otherwise. In fact dental anxiety is a major factor responsible for posing a major threat to oral health and due to this the patient can suffer from multiple serious complications like, septicemia, osteomyelitis of face and sinusitis<sup>2</sup>.

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The most nerve-racking situation in tackling an anxious patient might occur if confronted by a health care student. A recent local study using Depression-Anxiety-Stress Scale (DASS-21) found that dental students and that too females are found to be considered as more panicky, touchy and nervous as compared to male dental students<sup>3</sup>. Although DASS-21 is more commonly used by oral health researchers due to its ability to assess wide spectrum of anxiety, yet Corah Dental Anxiety and its modified version Modified Dental Anxiety Scale (MDAS) has been observed to be more inclusive, more valid and consistent, with much simpler and stable responding system among University level students<sup>4</sup>.

What so ever the dentists may experience in their practice while confronted by an anxious patient, yet very little is known about the level of anxiety among health care students when they confront a dental visit themselves. Adequacy of knowledge about the dental procedures may exacerbate anxiety making health care students more cautious about their own dental treatment. Hence this study was conducted to report self-responded assessments of dental anxiety levels among health care students (both dental and medical students) of a public sector University hospital and explore the difference in terms of their age, gender and their health related field of study.

## METHODOLOGY

All medical and dental students of Dow University of Health Sciences were aimed to be approached and MDAS questionnaire was distributed to be filled by them. This included five items with simplified 5-point scale responding system ranging from “not anxious” to “extremely anxious”. The five multiple-choice items were:

“If you went to your dentist for treatment tomorrow, how would you feel?”

“If you were sitting in the waiting room, how would you feel?”

“If you were about to have a tooth drilled, how would you feel?”

“If you were about to have your teeth scaled and polished, how would you feel?”

“If you were about to have a local anesthetic injection in your gum, how would you feel?”

The responses of all five items were added up to project a sum of dental anxiety scores, where score 6-18 indicated slight-to-fairly anxious and score of 19-25 indicated extremely anxious or possibly dental phobia.

The students were clarified about the questions used in study tool prior distribution. Only five hundred questionnaires could be conveniently distributed and participants were asked to return back on the same day. Data was entered and analyzed using statistical software Stata 11.0. Descriptive statistics included means (standard deviation) of participants' age and frequency distribution for their gender and health field the students belonged to. Overall prevalence of dental anxiety and dental phobia were also calculated. Inter-group comparisons were analyzed using Mann Whitney Test as none of the grouping variables (gender (male/female), age ( $\leq 21$ /  $>21$  years) and field of study (dental students/ medical) fulfilled the normality assumption. Statistical significance was assessed on the probability values of  $p < 0.05$  and confidence interval of 95%.

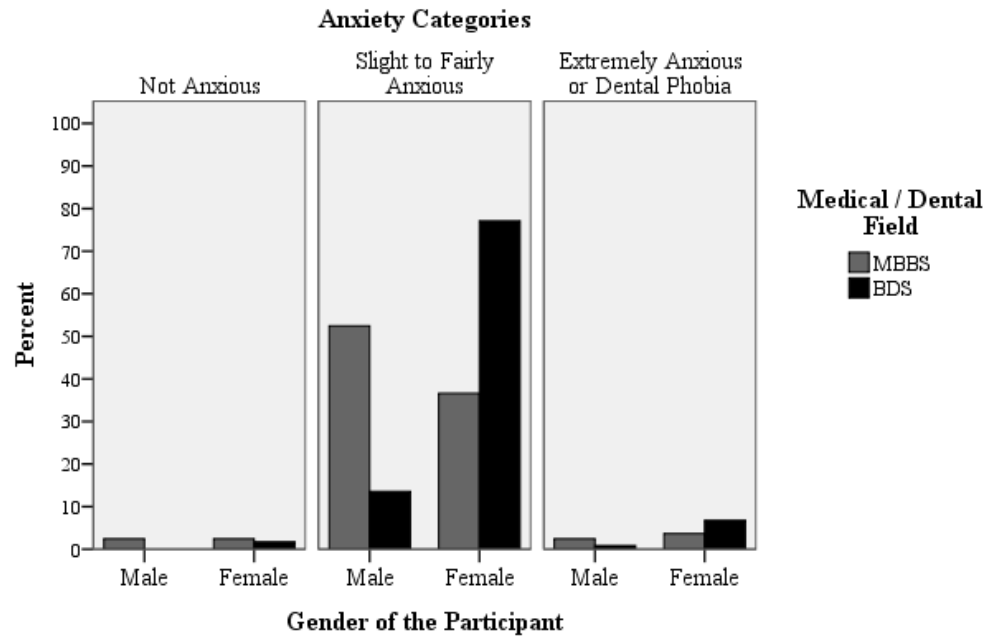
## RESULTS

Despite of aiming at all medical and dental students to be approached, only 315 were easily accessible and were recruited. Two hundred ( $n=200$ ) participants returned their questionnaire without any missing information; rest either did not return or were incompletely filled giving the reason that they have never visited a dentist for any kind of treatment. Hence information of only 200 questionnaires was entered as final data considering 63.5% response rate. Out of the total students included 59% belonged to dental field of study whereas 41% belonged to medical field. Gender-wise distribution was 68% females and 32% males. The mean age of participants was 21.57 years (minimum=18 years, maximum=25 years).

The overall prevalence of anxiety categories in relation to gender and field of study is displayed as Graph 1, with an overall mean anxiety score of 12.08 (minimum=5, maximum=21). Only 3% of the total was observed to have mean anxiety score of  $< 5$ . On the other hand majority (90%) suffered from slight to fairly anxious group and only 7% were observed as dental phobic (extreme anxiety). Statistically significant differences ( $p < 0.05$ ) in ranked mean anxiety scores were observed according to gender, age group and field of study differences respectively as can be seen in Table 1.

## DISCUSSION

The current study aimed at not only assessing the prevalence of anxiety among medical and dental students but also aimed at observing any difference in the anxiety level in terms of gender, age and field of study of the target participants. The study found that majority of students



**Graph 1:** Prevalence of Anxiety Categories according to Field of Study and Gender of Students (n=200).

**Table 1:** Difference in Ranked Mean Anxiety Scores According to Grouping Variables

Grouping Variables		n= 200	Mean Rank	p-value (2-tailed)
Gender	Male	64	88.01	0.036*
	Female	136	106.38	
Age	≤ 21 years	96	108.64	0.055
	>21 years	104	92.99	
Field of Study	MBBS Students	82	89.21	0.021*
	BDS Students	118	108.34	

\*Statistical significance  $p < 0.05$ .

despite of gender, age and field of their study suffered from a range of slight-to-fair anxiety level. Moreover, 7% of these students were also found to suffer from dental phobia; which is almost the same as globally found among general population, that is 5%<sup>1</sup>. It is worth mentioning that similar studies conducted to assess dental anxiety have different cut-off values for dental anxiety levels, depending upon the number of questions included. Some studies considered anxiety cut-off score of 15 where above 15 considered as high<sup>5-7</sup> or even severe anxiety level<sup>8, 9</sup> and others considered 19 and above as high and severely high<sup>10, 11</sup>.

When closely observed female BDS students were found more prevalent as compared to male MBBS students to be suffering both from anxiety as well as dental phobia. Similar

result was reported in other study<sup>9</sup>. This finding was unlike to that reported in a similar study where medical students reported dental anxiety with mean score  $>15$ <sup>12</sup>. Likewise, another similar study found dental students less anxious than medical and pharmacy students<sup>5</sup>. Self-reported anxiety level among female BDS students were found to be fairly raised for the two pertinent questions, that is related to “tooth drilled” and “local anesthetic injection”. The reason that BDS students were observed with raised dental anxiety score could be probably due to their exposure to prior knowledge regarding how these two procedures are routinely performed. The lack of knowledge about dentistry among medical students might be the reason for lower anxiety scores as they do not know sufficiently about the procedures

performed in dentistry. Female gender found with increased dental anxiety was in compliance with other similar cross-sectional<sup>8</sup> and longitudinal studies<sup>12</sup>. The reason suggested by one of these studies was neuroticism; similar to what an earlier study on the same study group was conducted to identify anxiety spectrum factors through factor analysis, attributing these females as more “touchy”, “panicky” and “nervous” than males<sup>3</sup>. Females related to health care studies are generally found to be more tensed<sup>13</sup>.

The reason for considering age 21 years as a cut-off to assess its relationship with dental anxiety in this study was because usually medical and dental students are either in their final year of studies or have already cleared their final year. The result of this study showed that students of age 21 years and below were found with higher anxiety score as compared to those belong to age group > 21 years. However, this difference was slightly significant which may be attributed to a chance finding. Although this finding was similar to what found in other studies, where fresher and sophomores were found more anxious than senior students<sup>11, 14</sup>.

The differences in all variables were noticeably large and of statistical significance, except for that attributed to age where marginal difference was observed. However, the results must be critically considered in terms of significant differences observed between groups related to mean ranked dental anxiety scores or individual items score of anxiety scale which probably could be misrepresentative and possibly reflect a difference by chance and not of an actual clinical significance. This could be attributed to small sample size and did not represent the general population, probably compromising the power of the study.

### CONCLUSION

It was concluded from the present study that female dental students of age group  $\leq 21$  years scored higher dental anxiety scores than medical male counter group of same age group. Particularly females were found to be more fearful of local anesthesia injection.

### RECOMMENDATIONS

Although the results based on absolute statistical significance must be inferred with care, still it is suggested that dental anxiety and dental phobia may have an adverse effect on quality of life. Hence appropriate measures must be taken to alleviate the obstacles related to the factors that may be related to the determinants of dental anxiety and fear. Dentists must be trained particularly in communicating

and psychologically managing<sup>15, 16</sup> their patients prior any therapy no matter he/she is treating his/her dentist fellow or a dental student. Dentists must understand that patient is after all a patient no matter he/she belongs to a health related field or not.

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### FINANCIAL INTEREST

None.

### CONFLICT OF INTEREST

None.

### AUTHORS' CONTRIBUTION

Complete manuscript writing was performed by the first author (AQ); however the research idea was conceived by fourth author (MB). Data was collected and recorded by last three authors (NA, DS and MB). Statistical analysis was performed by the first author (AQ). All authors approved the final version and agreed to be responsible for accuracy of results and integrity of the research.

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