

Dental Anxiety among Students of Lahore, Pakistan

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ABSTRACT

Objective: Current study aimed to explore the dental anxiety level among students in schools existing in Lahore.

Method: This study was descriptive cross-sectional in nature. Data of 300 students was collected from three schools. Students with age of 13years or above were included in study. MDAS was used to collect data with a section of demographics. SPSS version 23.0 was used for data analysis.

Results: Mean MDAS score of the sample was 14.11 ± 4.330 . The frequency of mild anxiety (MDAS <11) was 21.3%, moderate to severe anxiety (MDAS 11 to 18) was 62.7%, and dental phobia (MDAS 19 to 25) was 16.0%.

Conclusion: Dental anxiousness was found in more than half of the students.

Keywords: Dental anxiety, Students, Dental phobia, Extraction

INTRODUCTION

Three in four individuals experience dental anxiety worldwide while one in ten individuals suffer from extreme levels, leading to delay, irregular attendance or sometimes complete avoidance in seeking dental care.^{6, 17, 19} Though advances have been made to make dental experience as pleasant as possible for patients, dental anxiety still persists ubiquitously.¹¹

Dental anxiety being a universal phenomenon has a high prevalence and variation worldwide. Roughly half of all American population and one-third of the UK adult population are dentally anxious,¹² despite these high levels only one-fifth of dental practitioners in the UK routinely screen patients for dental anxiety.¹³ Frequency of moderately to severely anxious patients in France and Australia varies from 13% to 15%,¹³ in Ireland, Wales, Bulgaria, and Saudi Arabia, it varies from 35% to 52%.^{10, 19} Regional studies done in India, China, Iran and Pakistan shows variation ranging between 41% to 59%.^{20, 25} Variability in results may be attributed to regional and cultural differences, and to varied samples.

Higher levels of dental anxiety are generally seen in females,^{20, 25} younger people,^{18, 21} and people with bad past dental experiences.^{1, 19} Extreme levels of dental anxiety are termed as dental phobia. Nearly one in ten Americans and UK adults have extreme levels of dental anxiety. However, in Pakistan and India, only one out of fifty individuals suffer from dental phobia/have to deal with dental phobia, which is much less when compared to other western countries

Moderate to severe dental anxiety in Pakistan ranges from 21% to 50%. Most of the studies done in Pakistan, and other countries, have been based on small, localized and convenient samples of patients who presented to dental treatment facilities.^{14, 15, 18, 19, 23} The aim of this study were to measure the frequency and levels of dental anxiety amongst students in schools of Lahore presenting to dental hospitals as well as to explore gender wise difference of dental anxiety.

METHOD

This questionnaire-based descriptive cross-sectional study was conducted Lahore. Approval was granted by the Institutional Review Board (IRB) of the Institute of Dentistry,

CMH Lahore Medical College and by the respective administrations of participating institutes: Crescent Model Higher Secondary Schools, Lahore Garrison Education System and DHA Education System.

The first part of the questionnaire consisted of the Modified Dental Anxiety Scale (MDAS), comprising of a five-question scoring system with the total score ranging between 5 and 25.^{16, 18, 19} Scores of 5-10 represent mild anxiety, 11-18 represent moderate to severe anxiety, and 19-25 represent dental phobia.¹⁶ The questionnaire consisted of demographic questions including income groups. A pilot study was performed on 10 students aged 13 and above by convenience sampling. Modifications were accordingly made to the questionnaire. Inclusion criteria were 10 students aged 13 and above who were present at the schools at the time of survey. Modifications were accordingly made to the questionnaire. For schools, the questionnaire was discussed, explained and administered to the individual classes, and similarly collected.

Percentage and frequencies were calculated as descriptive statistics. Independent sample t test was used to explore difference of MDAS total score among both genders. Furthermore, Chi-square was done to explore gender wise difference among three categories of MDAS.

RESULTS

There were a total of 300 respondents which were schools students. Response rate was 100%. The number of males was 161 (53.7%) and females 139 (46.3%). Mean age of participants was 15.64 ± 1.629 . The most frequent level of education was Secondary level (matric/O'level and FSc/A'level) in which there were 163 (54.3%) respondents.

Mean MDAS score of the sample was 14.11 ± 4.330 . The frequency of mild anxiety (MDAS <11) was 21.3%, moderate to severe anxiety (MDAS 11 to 18) was 62.7%, and dental phobia (MDAS 19 to 25) was 16.0%.

The results of Mann Whitney revealed no significant difference between male (MDAS 13.80) and female (MDAS 14.4) students in terms of dental anxiety ($t = -1.21$, $P = .281$).

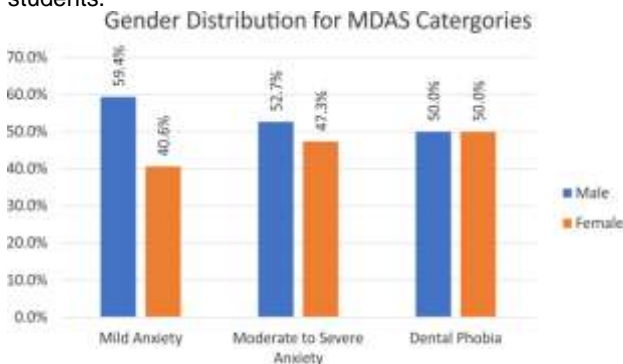
Similarly, there was no significant difference in dental anxiety between students belonging to lower and higher

income group. No significant differences were seen in dental anxiety scores between level of education, income and age.

Table 1| Mean MDAS scores and p-values based on Mann Whitney and Kruskal Wallis tests.

Demographic Categories		n	%	Mean MDAS Score	P value
Age (years)	13-16 years	209	70	14.3	
	17-20 years	91	30	13.6	0.200
Gender	Males	161	54	13.8	0.281
	Females	139	46	14.4	
Income (Rupees)	Lower (≤50K)	38	13	13.7	
	Middle (50K<i≤100K)	92	31	14.3	0.572
	Higher (>100K)	170	56	14.1	
Level of Education	Classes 7 and 8	13	4	11.9	
	Matric/O Level	163	54	14.4	0.098
	Intermediate/A Level	124	41	14.0	
	Overall	300	100	14.1	

Graph 1 showed that female students had low level of mild dental anxiety (40.6%) as compared to male students (59.4%). At moderate to severe anxiety level, female students showed slightly low level of dental anxiety (47.3%) as compared to male students (52.7%). Dental Phobia was reported by 50% of male students as well as 50% of female students.



Graph 1| Dental Anxiety Levels among both Genders: Students with bad past dental experiences reported significantly higher MDAS scores when compared to those without one (p<0.001). The most frequently observed bad past dental experiences were ‘improper extraction’, ‘dentist’s ignorance/hospital’s atmosphere’, and ‘any sort of pain’.

Table 2. Bad past dental experiences identified by the participants

Bad Past Dental Experience	Frequency n=38
Improper Extraction	8
Dentist's ignorance or improper attire or hospital's atmosphere/hygiene	6
Pain (of any sort)	6
Prolonged treatment time / Excessive waiting area time	1
Improper root canal therapy (RCT)	5
Improper filling	3
Improper / inadequate local anesthesia (LA)	2
Due to personal fears	2
Did not specify an experience	5

DISCUSSION

More than half of the respondents (62.7%) in this study were moderately to severely anxious, with a mean MDAS score of 14.11. These results were within the range of, or closer to, other studies done regionally and worldwide with moderate to severe anxiety varying between 13% to 80% and a mean MDAS score ranging between 10.11 and 13.2. 1, 10, 19, 20 25

Extreme levels of dental anxiety also classified as dental phobia¹¹, were reported in 16.0% participants, which is relatively high as compared to the global range of 3-15%.^{1, 19, 20} Thus, more than two-thirds (72%) of the younger population of Lahore is struggling with moderate to extreme levels, highlighting the need to screen patients routinely for dental anxiety.

Comparison of anxiety levels between countries, and even samples within a country, show significant variation, which may be attributed to sample selection, cultural differences and the reliability of the MDAS scale.^{1, 19, 20, 25} MDAS does not have a question addressing tooth extraction, even though in this study *extraction* was reported to be one of the most frequent self-perceived triggers of dental anxiety. Though there are six other questionnaires and scales for measuring dental anxiety,⁶ MDAS remains the most widely accepted instrument.^{2, 8, 14, 16, 18, 19, 23, 25}

Females were slightly more dentally anxious than males in this study. Local, regional and global studies support the idea that females are not only more anxious^{20, 25}, but are also more expressive when it comes to negative emotions involving fear, anxiety and sadness.^{23,24} In Pakistani society, it is more acceptable for females to express fear and anxiety, which may explain the higher levels of dental anxiety among them.²⁵

Bad past experiences identified by the students were related to pain and poor management on part of the dentist - factors which have previously been attributed to causing dental anxiety.^{1,3,25}

CONCLUSION:

More than two-thirds of the students in our sample had significant levels of dental anxiety. Female participants and those with bad past experiences had higher MDAS scores than males.

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