

## ORIGINAL RESEARCH

# Assessment of Dental Anxiety Levels among the University Teaching Faculty from different Fields of Medicine and Healthcare

<sup>1</sup>Aisha Wali, <sup>2</sup>Talha M Siddiqui, <sup>3</sup>Sidra Tul Muntaha Hashmi, <sup>4</sup>Sherbano Hassan, <sup>5</sup>Hashmat Karim

## ABSTRACT

Dental anxiety is considered to be a multidimensional fear that can be acquired by a number of parameters involving both personality and psychological traits as well as conditioning experiences and vicarious learning from role models. A cluster sampling technique was used for the study purpose. The sample population included faculty members of Baqai Medical University related to different fields of medicine and healthcare. Data were analyzed by SPSS version 19. Chi-square test was done to compare association of dental anxiety with different fields of medicine and healthcare. Group comparisons were done by using one-way ANOVA test and post hoc Tukey's test.

**Keywords:** Dental fear, Dental anxiety, Dental phobia, Dental anxiety scales, Modified dental anxiety scale.

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## INTRODUCTION

Dental anxiety is considered to be a multidimensional fear that can be acquired by a number of parameters involving both personality and psychological traits as well as conditioning experiences and vicarious learning from role models. It is an important component of discomfort to patients in the dental clinics.<sup>1-4</sup> Dental anxiety is ranked fourth among common fears and ninth among intense fears.<sup>5</sup> In practice, differentiating dental anxiety, fear and phobia is complicated, and these terms are often used interchangeably within the literature.<sup>6</sup> Dental fear is considered to be a common response to one or more specifically

threatening stimuli in dental setting and is therefore considered an adaptive and healthy response.<sup>7</sup> This in contrast to dental anxiety, which is more diffused not related to a direct threat, as it has become anticipatorily oriented toward future events, rather than being a direct adaptive response.<sup>7,8</sup> Dental phobia represents a severe form of dental anxiety and is characterized by a marked and persistent fear in relation to either clearly discernible situations/objects, e.g. drilling, injections or to dental procedures in general, and has a significant influence on daily functioning.<sup>9</sup> Dental anxiety is associated with age, gender, educational qualification, socioeconomic status and culture that varies from person to person.<sup>10</sup> Many scales were developed in order to assess dental anxiety. Corah dental anxiety scale was proven to be popular among dental researchers.<sup>3</sup> Humphris et al (1995) provided a modified scale from the original corah dental anxiety scale. The modified dental anxiety scale is considered to be comprehensive, highly valid and reliable, with a simpler and more consistent answering system<sup>11</sup> and it is also translated in different languages like Spanish,<sup>12</sup> Greek,<sup>13</sup> Chinese,<sup>14</sup> Romanian<sup>15</sup> and Turkish.<sup>16</sup> A study done by Kakko et al to assess anxiety levels of faculty of University of Washington reported high dental fear level in the faculty members available for dental clinics.<sup>17</sup> The dental literature lacks sufficient information about dental anxiety levels and its correlation among University Teaching Faculty from different fields of medicine and healthcare. However, there is no such data available on assessment of anxiety levels of faculty members reported in Pakistan; therefore, the present study was conducted to assess the anxiety levels among the dental, medical and pharmaceutical teaching faculty members.

## MATERIALS AND METHODS

### Study Design

The present cross-sectional study was conducted from October 2013 to March 2014 at Baqai Medical University. The Ethical Committee of Baqai Medical University approved the study design and all the respondents were provided to sign a detailed informed consent form.

<sup>1</sup>Senior Lecturer, <sup>2</sup>Associate Professor, <sup>3-5</sup>House Surgeon

<sup>1-5</sup>Department of Operative Dentistry, Baqai Dental College Karachi, Pakistan

**Corresponding Author:** Aisha Wali, Senior Lecturer Department of Operative Dentistry, Baqai Dental College Karachi, Pakistan, Phone: 03002248518, e-mail: aishawali@hotmail.com

## Sampling Technique

A cluster sampling technique was used for the study purpose. The sample population included faculty members of Baqai Medical University related to different fields of medicine and healthcare. These included the faculty members of medical sciences, dental sciences and pharmacological sciences. The questionnaires were distributed to the faculty members and were informed about the study and the questionnaire was explained and clarified.

## Inclusion Criteria

- At least 5 years of teaching experience in their respected fields.
- Have undergone a dental treatment (at least once)?

## Exclusion Criteria

- Less than 5 years of teaching experience.
- No previous history of undergone a dental treatment.

## Instruments

A total of 70 questionnaires were distributed, of which 53 were collected and analyzed statistically. Dental anxiety was assessed by means of modified dental anxiety scale (MDAS). The questionnaire consists of five questions that were used to measure the anxiety level due to certain dental procedures and situations. These include the following:

- If you went to your dentist for treatment tomorrow, how would you feel?
- If you were sitting in a 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 gums in upper last tooth, how would you feel?

The scale has a consistent answering scheme for each item ranging from 'not anxious' to 'extremely anxious'.<sup>18</sup> The scores for each of the five-item responses were summed up to give an estimated value of anxiety giving a minimum score of 5 and a maximum of 25. By the reference to CDAS/MDAS conversion tables a score of 5 to 10 for mild anxiety, 11 to 18 for moderate to severe anxiety, 19 to 25 for probable dental phobia.<sup>19</sup> A cut-off point of 19 was determined by Humphins and above<sup>18</sup> indicates dental phobia that may require special attention by dental practitioners.

## STATISTICAL ANALYSIS

Descriptive statistics were obtained and the means, standard deviation was calculated. Chi-square test was done to compare association of dental anxiety with different fields of medicine and healthcare. Group comparisons were done by using one-way ANOVA test and post hoc Tukey's test. The data were analyzed using the SPSS computer software (Statistical Package for the Social Sciences, version 19.0). Significance level was set at  $p = 0.05$ .

## RESULTS

A total of 70 questionnaires were distributed to the participants, out of which 53 questionnaires were returned. The study fields of the participants included faculty of medical sciences ( $n = 12$ ), (22.2%), faculty of dental sciences ( $n = 27$ ), (50%) and faculty of pharmaceutical sciences ( $n = 14$ ), (25.9%). Results showed that levels of dental anxiety, modified dental anxiety scale were clinically significant for faculty of pharmaceutical sciences and dental sciences. Eight (57.14%) of the faculty from pharmaceutical sciences showed moderate to severe anxiety followed by six (50%) of faculty of medical sciences and nine (33.33%) of faculty of dental sciences. Two (14.28%) of the faculty from pharmaceutical sciences were found to be dental phobic and one (3.7%) of the faculty from dental sciences. Table 1 presents the assessment of dental anxiety levels by MDAS.

Dental anxiety levels were found to be high among the faculty of pharmaceutical sciences. The mean total anxiety score of question no. 5 of MDAS came out to be  $3.29 \pm 1.069$ . The next mean total anxiety score of question no. 3 of MDAS was  $2.83 \pm 0.718$ . Table 2 presents the descriptive statistics of the faculty from different fields of medicine and healthcare. Three (21.4%) of the faculty members from Pharmaceutical sciences were found to be extremely anxious about the local anesthetic injection in gums. Five (35.7%) of them were found to be not anxious about sitting in the waiting room. Table 3 presents the assessment of dental anxiety levels in the faculty of pharmaceutical sciences. Six (50%) of the faculty from medical sciences were found to be fairly anxious about the tooth to be drilled whereas one (8.3%) was found extremely

**Table 1:** Assessment of dental anxiety levels faculties of different fields of medicine and healthcare

<i>Modified dental anxiety scale</i>	<i>Pharmaceutical sciences</i>	<i>Medical sciences</i>	<i>Dental sciences</i>
5-10 (mild anxiety)	4 (28.57%)	6 (50%)	17 (62.96%)
11-18 (moderate to severe anxiety)	8 (57.14%)	6 (50%)	9 (33.33%)
19-25 (dental phobia)	2 (14.28%)	0	1 (3.7%)

**Table 2:** The descriptive statistics of the faculty members from different fields of medicine and healthcare

<i>Modified dental anxiety scale</i>	<i>Field of study</i>	<i>N</i>	<i>Mean</i>	<i>Std. deviation</i>	<i>p-value</i>
If you went to your dentist for your treatment tomorrow, how would you feel?	MBBS	12	1.75	1.215	0.16
	BDS	27	1.78	0.892	
	PHARM D	14	2.64	1.393	
If you were sitting in the waiting room, how would you feel?	MBBS	12	2.08	0.900	0.572
	BDS	27	1.81	1.039	
	PHARM D	14	2.07	1.207	
If you were about to have your tooth drilled, how would you feel?	MBBS	12	2.83	0.718	0.021
	BDS	27	2.41	1.309	
	PHARM D	14	3.07	1.141	
If you were about to have your teeth scaled and polished, how would you feel?	MBBS	12	1.67	0.985	0.72
	BDS	27	1.63	1.043	
	PHARM D	14	2.21	1.188	
If you were about to have a local anesthetic injection in your gums in the upper back tooth, how would you feel?	MBBS	12	2.42	0.996	0.053
	BDS	27	2.33	1.359	
	PHARM D	14	3.29	1.069	

**Table 3:** Assessment of dental anxiety levels in the faculty of pharmaceutical sciences

<i>Modified dental anxiety scale</i>	<i>Dental anxiety score</i>				
	<i>Not anxious</i>	<i>Slightly anxious</i>	<i>Fairly anxious</i>	<i>Very anxious</i>	<i>Extremely anxious</i>
If you went to your dentist for treatment tomorrow, how would you feel?	4 28.6%	3 21.40%	2 14.3%	4 28.6%	1 7.1%
If you were sitting in the waiting room, how would you feel?	5 35.70%	6 42.9%	1 7.1%	1 7.1%	1 7.1%
If you were about to have your tooth drilled, how would you feel?	0 0%	6 42.9%	3 21.4%	3 21.4%	2 14.3%
If you were about to have your teeth scaled and polished, how would you feel?	4 28.6%	6 42.9%	2 14.3%	1 7.1%	1 7.1%
If you were about to have a local anesthetic injection in your gums in the upper back, how would you feel?	0 0%	3 21.4%	7 50%	1 7.1%	3 21.4%

anxious about going the dentist for treatment tomorrow. Table 4 presents the assessment of dental anxiety levels in the faculty of medical sciences. Four (14.8%) of the faculty from dental sciences were found to be extremely anxious about local anesthetic injection in gums. Seventeen (63%) were found to be not anxious about the teeth to be scaled and polished. Table 5 presents the assessment of dental anxiety levels in the faculty of dental sciences.

## DISCUSSION

Despite the advances in dentistry, fear of dental treatment still persists worldwide and is a major barrier to successful dental treatment. Dental anxiety has been well described in western world however in developing countries studies on the topic are scarce.<sup>20</sup> This study is first of the kind in Pakistan that was carried out to compare and highlight the knowledge of dental anxiety levels among the teaching faculties from different fields of medicine and healthcare.

The highest dental anxiety level was found amongst the faculty from pharmaceutical sciences and the lowest reported among the faculty from dental sciences on the

basis of MDAS. The MDAS is considered to be valid, reliable, concise and easy to use; thus it was used to assess the levels of dental anxiety in this study.<sup>4</sup>

A total score of 19 to 25 indicates dental phobia. Two (14.28%) of the faculty from pharmaceutical sciences scored a total of 21 and 25 respectively in the MDAS score when they visited dental clinics. This phobia could be due to the absence of dental education during their undergraduate courses or their previous dental experience. One (3.7%) of the faculty from dental sciences scored a total of 20, reflected that dental faculty have adequate knowledge and awareness in oral health maintenance. None of the faculty member from medical sciences was found to be dental phobic; this could be due to the fact that they are supposed to be familiar with stress management related to health measures, increased awareness and professional development.

The sense of fear to stimuli varies noticeably because each individual has special fear responses due to different stimuli during dental treatments.<sup>21</sup> The present study results showed that seeing the anesthetic needle and feeling the needle injection were the most common fear

**Table 4:** Assessment of dental anxiety levels in the faculty of medical sciences

<i>Modified dental anxiety scale</i>	<i>Dental anxiety score</i>				
	<i>Not anxious</i>	<i>Slightly anxious</i>	<i>Fairly anxious</i>	<i>Very anxious</i>	<i>Extremely anxious</i>
If you went to your dentist for treatment tomorrow, how would you feel?	7 58.3%	3 25%	1 8.3%	0 0%	1 8.3%
If you were sitting in the waiting room, how would you feel?	3 25%	6 50%	2 16.7%	1 8.3%	0 0%
If you were about to have your tooth drilled, how would you feel?	0 0%	4 33.3%	6 50%	2 16.70%	0 0%
If you were about to have your teeth scaled and polished, how would you feel?	7 58.3%	3 25%	1 8.3%	1 8.3%	0 0%
If you were about to have a local anesthetic injection in your gums in the upper back, how would you feel?	2 16.7%	5 41.7%	3 25%	2 16.7%	0 0%

**Table 5:** Assessment of dental anxiety levels in the faculty of dental sciences

<i>Modified dental anxiety scale</i>	<i>Dental anxiety score</i>				
	<i>Not anxious</i>	<i>Slightly anxious</i>	<i>Fairly anxious</i>	<i>Very anxious</i>	<i>Extremely anxious</i>
If you went to your dentist for treatment tomorrow, how would you feel?	13 48.1%	8 29.6%	5 18.5%	1 3.7%	0 0%
If you were sitting in the waiting room, how would you feel?	14 51.9%	7 25.9%	3 11.1%	3 11.1%	0 0%
If you were about to have your tooth drilled, how would you feel?	9 33.3%	7 25.9%	3 11.1%	7 25.9%	1 3.7%
If you were about to have your teeth scaled and polished, how would you feel?	17 63%	6 22.2%	2 7.4%	1 3.7%	1 3.7%
If you were about to have a local anesthetic injection in your gums in the upper back, how would you feel?	8 29.6%	11 40.7%	3 11.10%	1 3.7%	4 14.8%

from dental procedures. The highest mean was scored by the faculty from pharmaceutical sciences followed by a mean score of 2.42 by the faculty from medical sciences and a mean score of 2.33 by the faculty from dental sciences. The next most anxiety producing item was about the tooth to be drilled and a mean score of 3.07 was scored by the faculty from pharmaceutical sciences. Faculty from dental sciences was found to be less anxious with a mean score of 2.41. Most of the people feel anxious while sitting in the waiting room. In an adult dental health survey, Todd and Lader found that fear was a major barrier to the receipt of routine dental care.<sup>22</sup> According to Table 2, the difference in mean response was found out to be statistically significant among the faculty from pharmaceutical sciences and medical sciences. In the present study, it was found that faculty members from pharmaceutical sciences were more anxious with a mean score of 2.64 about their appointment for dental treatment tomorrow.

Table 2 showed that the mean difference was clinically significant among the faculty from medical sciences and dental sciences. Faculty from medical sciences and dental sciences were found to be less anxious with a mean score of 1.67 and 1.63 than the faculty from pharmaceutical sciences with a mean score of 2.21 when asked about scaling and polishing of the teeth. Assessing the level of

dental anxiety among the faculty members from dental sciences is utmost important as they are a rich source of transferring their knowledge and clinical skills to undergraduates to be able to manage dental phobic patients. The present study data precludes that there is a need to schedule dental awareness programs among the University Teaching Faculty.

## CONCLUSION

It was concluded from the current study that faculty from pharmaceutical sciences scored highest anxiety levels when compared to faculty from dental sciences and medical sciences. Fear from seeing anesthetic needle and feeling the anesthetic injection around gums were the main reason of dental phobia. However, the present study utilized the MDAS and assessed the levels of dental anxiety among the faculty members from Baqai Medical University, yet still further research is required to investigate dental anxiety levels as the sample size of the current study was very small.

## REFERENCES

1. Omari Al. Dental anxiety among university students and its correlation with their field of study. *J Appl Oral Sci* 2009; 17(3):199-203.

2. Shrestha A, Rimal J. Dental anxiety among patients visiting a teaching dental hospital in Mangalore. *J Nepal Dent Assoc* 2009;10(1):12-15.
3. Corah NL. Development of a dental anxiety scale. *J Dent Res* 1969;48:596.
4. Humphris GM. Occupational stress and job satisfaction in the community dental service of North Wales: a pilot study. *Comm Dent Health* 1993;10(1):73-82.
5. Kvale B, Berg E, Raadal M. The ability of Corah's dental anxiety scale and Spielberger's State Inventory to distinguish between fearful and regular Norwegian dental patients. *Acta Odontologica Scandinavica* 1998;56(2):105-109.
6. Armfield JM. How do we measure dental fear and what are we measuring anyway? *Oral Health Prev Dent* 2010;8(2):107-115.
7. Klingber G, Broberg AG. Dental fear/anxiety and dental behaviour management problems in children and adolescents: a review of prevalence and concomitant psychological factors. *Int J Pediatr Dent* 2007;17(6):391-406.
8. Milgrom P, Weinstein P, Kleinknecht R, Getz T. Treating fearful dental patients: a patient management handbook. 2nd ed. Seattle, WA: University of Washington Press; 1995. p. 313-319.
9. American Psychiatric Association (APV). Diagnostic and Statistical Manual of Mental Disorders (DSM-IV IVTR). 4th ed. Washington, DC: American Psychiatric Association; 2000. p. 311-312.
10. Milgrom P, Weinstein P, Rubin J. Assessing patients' fears. *Dentistry* 1986;86:14-17.
11. Tanni DQ. Dental attendance and anxiety among public and private school children in Jordan. *Int Dent J* 2002;52(1):25-29.
12. Coolidge T, Hillstead MB, Farjo N, Weinstein P, Coldwell SE. Additional psychometric data for the Spanish Modified Dental Anxiety Scale, and psychometric data for a Spanish version of the Revised Dental Beliefs Survey. *BMC Oral Health* 2010;10(1):12.
13. Coolidge T, Arapostathis KN, Emmanouil D, Dabarakis N, Patrikiou A, Economides A, Kotsanos N. Psychometric properties of Greek versions of the Modified Corah Dental Anxiety Scale (MDAS) and the Dental Fear Survey (DFS). *BMC Oral Health* 2008;8(1):29.
14. Yuan S, Freeman R, Lahti S, Lloyd-Williams F, Humphris G. Some psychometric properties of the Chinese version of the modified dental anxiety scale with cross validation. *Health and Quality of Life Outcomes* 2008;6(1):22.
15. Marginean I, Filimon L. Modified dental anxiety scale: a validation study on communities from the west part of Romania. *Int J Educ Psychol Comm* 2012;2(1):102-114.
16. Tunc EP, Firat D, Onur OD, Sar V. Reliability and validity of the modified dental anxiety scale (MDAS) in a Turkish population. *Comm Dent Oral Epidemiol* 2005;33(5):357-362.
17. Kakko T, Milogram P, Coldwell SE, Getz T, Weinstein P, Ramsay DS. Dental fear among university employees: implications for dental education. *J Dent Educ* 1998;62(6):415-420.
18. Humphris G, Morrison T, Lindsay SJE. The modified dental anxiety scale: UK norms and evidence for validity. *Comm Dent Health* 1995;12(3):143-150.
19. Freeman R, Clarke HM, Humphris GM. Conversion tables for the Corah and modified dental anxiety scales. *Community Dental Health* 2007;24(1):49-54.
20. Bushra M, Ehtesham K, Muslim K. Dental anxiety scale in exodontia patients. *JKCD* 2011;1(2):66-70.
21. Abu Hantash RO, Abu Younis MH, Aker MM. Dental anxiety and fear among medical field students at Al Quds University. *British J Med Med Res* 2014;4(12):2312-2321.
22. Todd J, Lader D. Adult Dental Health in United Kingdom in 1988. London: HMSO 1991.