

# Assessment of Dental Anxiety in Adults Undergoing Dental Procedures in Dow International Dental College

Wajiha Anzar, Ashar Afaq and Qaiser Ali Baig

## ABSTRACT

**Objectives:** The objective of this study was to assess anxiety level in patients seeking dental treatment in Dow International Dental College and its relationship with social factors, demographic factors and according to dental procedures using Modified Dental Anxiety Scale by Corah.

**Methodology:** Analytical cross-sectional study was conducted in Dental OPD of Dow International Dental College for 3 months, from December 2015 to February 2016. Sample size was calculated as 386. Consented individuals of both genders of all race, socio-economic status with the seeking dental treatment in this college were included. Self administered questionnaire based on Modified Dental Anxiety Scale (MDAS) by Corah was used. SPSS v.19 was used for statistical analysis.

**Results:** A total of 386 (165 males and 221 females) participants were included. In this study 31(8%) participants were anxious whereas 355(92.0%) were non-anxious. Mean anxiety score was reported as 10(±4) which indicates a low level of anxiety. There was a statistically significant association found between dental anxiety and variables like gender (p-value=0.002), level of education (p-value=0.005) and type of dental procedures like oral diagnosis, restorative procedures, scaling, polishing, oral surgery and prosthetic treatment (p-value 0.02). An insignificant association was seen between dental anxiety and variables like age (p-value=0.652) and occupation (p-value=0.214).

**Conclusion:** Current study suggests that the occurrence of anxiety is low in patients presenting to DIDC presenting for dental check-ups.

**Key words:** Dental anxiety, modified dental anxiety scale.

**How to cite this article:** Anzar W, Afaq A, Baig QA. Assessment of dental anxiety in adults undergoing dental procedures in Dow International Dental College, J Dow University of Health Sciences 2017; 11(1): 2-5.

## INTRODUCTION

Dental anxiety refers to a feeling of fear, or some protective response due to some real facts or by the lack of information regarding procedures by the patient. Whereas, dental phobia is a type of fear which has nothing to do with the real circumstances and cannot be expressed by patients in words. Both the terms can be used interchangeably.<sup>1</sup>

In United States 75% of the individuals undergo some level of anxiety ranging from mild to severe. It is also believe that nearly 5 % to 10% adults are so anxious about their procedure leading to the avoidance of dental treatment, majoring of such anxious patient's only visit dentist only if they experience extreme level of pain and

swelling leaving the patient with no other option except dental treatment.<sup>2</sup> Dental Fear and anxiety is a common phenomenon experienced by the individuals seeking for dental treatment. There are evidences that both phenomena are linked with the dental treatment. Controlling the levels of fear and anxiety has been a great challenge for the dentists and other dental care professionals.<sup>3,4</sup> It is also seen that it impacts the daily life and quality of dental procedure. A fairly anxious patient delays his or her dental treatment leading to a more intense form of management in later stages like surgical intervention due to advancement of condition.<sup>5</sup> The cause of anxiety can be due to a number of factors like unpleasant past dental treatment, perceiving wrong information from media and painful history of dental treatment from other family member or due to psychological causes.<sup>6,7</sup>

A practitioner must assess levels of patient's anxiety in order to provide quality treatment. Lower levels of anxiety demands little interventions like creating a friendly environment and reassuring the patient,

---

Department of Community Dentistry, Dow University of Health Sciences, Karachi, Pakistan.

Correspondence: Dr. Wajiha Anzar. Department of Community Dentistry, Dow University of Health Sciences, Karachi, Pakistan.

E-mail: wajiha.anzar1@gmail.com

similarly in moderate levels of anxiety coping strategy is need whereas pharmacological management is necessary for extremely phobic patients.<sup>8</sup> Previously a number of studies have been conducted on this topic. A study conducted in Israil revealed that anxiety was greatly experienced by females and in individuals undergoing dental extraction.<sup>12</sup> Relationship between dental anxiety and level of education was evident in an Indian study.<sup>13</sup> Another study performed in Nigeria showed that females related greater anxiety scores when undergoing RCT.<sup>14</sup> Whereas Salvatore and Filippo et al<sup>18</sup> showed that relationship between dental anxiety and gender does not exist. Study by Heaton J et al showed that young patients were more anxious leading to the invasive form of dental management due to negligence.<sup>10</sup> The objective of this study was to assess anxiety level in patients seeking dental treatment in Dow International Dental College and its relationship with social factors, demographic factors and according to type of dental procedure using Modified Dental Anxiety Scale by Corah.

## MATERIALS & METHODS

After obtaining permission from Institutional Review Board of Dow University Of Health Sciences (IRB-680/DUHS/Approval/2016/168), an analytical cross-sectional study was conducted in Dow International Dental College, Karachi for the duration of three months, from December 2015 to February 2016. Sample size was calculated taking reference from a similar article. Values of mean DAS1 in both genders were considered i.e 9.48 and 10.51 and standard deviation of both genders i.e 3.53 and 3.68 at 95% confidence interval and keeping the power of study as 80% the sample size was calculated to as 386.<sup>18</sup>

We included a total of 386 patients in our study through convenience sampling. These selected individuals were seeking for one of the following dental procedures: root canal, crown preparation, scaling and polishing, tooth extractions or periodontal treatment. Patients were asked to fill up a consent form prior to participation. Individuals of both genders who provided consent, presenting with dental problems, age 18 to 60 years, all socio-economic classes, ethnic groups and religious groups are included. Whereas those who provided no consent and were non-cooperative were excluded. Interview administered questionnaire was filled by the examiner in the waiting area prior to the treatment.

The questionnaire comprised of three sections which included questions on socio-demographics, patient's behavior towards dental treatment and patient's knowledge about his or her of oral status. The second section of the questionnaire included self-reported

modified dental anxiety scale (MDAS). Score is graded from 1-5, where 1= not anxious 2= slightly anxious, 3=fairly anxious, 4= very anxious, 5= extremely anxious. Sum of all five values gives the total score of anxiety, range is 5 to 25, cut off is 19 as per WHO criteria which gives evidence that the patient is anxious and phobic.x Data collected was analyzed statistically using SPSS v.16. Frequency distribution was obtained The Fisher's exact test was used to test the difference due to small expected frequencies in some cells. Fisher's exact test was applied to find association between the dental anxiety and other variables like type of dental treatment, gender, age, education and occupation. (P-value <0.05 ).

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008. Informed consent was obtained from all patients for being included in the study.

## RESULTS

A total of 386 (165 males and 221 females) participants were selected. The age of participants was between 18-62 years with mean age 35( $\pm$ 1.31). Mean anxiety score was found as 10( $\pm$ 4). Sociodemographics and results of modified Dental Anxiety scale is given in Table 1 , which shows that after setting the cut off value as 19 there were total 31(8%) participants who were anxious whereas 355(92.0%) were non-anxious.

A statistically significant association was found between gender and levels of anxiety (p-value 0.002. Similarly marital status, dental procedure and level of education is significantly associated with the increasing levels of anxiety (p-value 0.003p-value 0.02, p-value0.005). Insignificant association was found between dental anxiety and variables like age, occupation and monthly income.

In third section of questionnaire participant's knowledge was assessed about his or her dental treatment. Association was found between dental anxiety and dental status of patients as well as with the frequency of brushing. (p-value 0.012, 0.047). We also found out that type of dental procedure is significantly associated with the level of anxiety (p-value 0.02). It was also seen that participants were more anxious if they had to undergo surgical procedures with mean values of 2.3. This was followed by restorative procedures mean value 2.1 , oral diagnosis mean value 2, followed by scaling and polishing exhibiting the mean of 1.95 and least anxiety score was found in case of prosthodontic procedures i.e mean value 1.7. This was concluded that participants were less likely to be anxious if they had had to undergo prosthetic procedures.

Table 1: Socio Demographics of Participants

Variables	Frequency n(%)	Mean Anxiety Score		P-value
		Anxious	Non anxious	
<b>Siodemographics</b>				
18-26	12(3.1%)	136(35.2%)	11.3	0.652
27-35	9(2.3%)	79(20.5%)	11.0	
36-44	2(0.5%)	50(13%)	9.3	
45-53	3(0.8%)	47(12.2%)	9.7	
54-62	5(1.3%)	43(11.1%)	9.8	
<b>Total</b>	<b>31(0.8%)</b>	<b>355(92%)</b>		
<b>Gender</b>				0.002*
Male	5(1.3%)	160(41.5%)	9.6	
Female	26(6.7%)	195(50.5%)	11.3	
<b>Total</b>	<b>31(0.8%)</b>	<b>355(92%)</b>		
<b>Marital status</b>				0.003*
Single	13(3.4%)	146(37.8%)	11.4	
Married	16(4.1%)	207(53.6%)	9.6n	
Widowed	1(0.3%)	2(0.5%)	11.3	
<b>Total</b>	<b>31(8.0%)</b>	<b>355(92%)</b>		
<b>Level of education</b>				0.005*
10 or less than 10 years of education	7(1.8%)	88(22.8%)	9.3	
12 years	2(0.5%)	81(21%)	10.9	
16 years	19(4.9%)	112(29%)	11.7	
More than 16 year	3(0.8%)	74(19.2%)	10.6	
<b>Total</b>	<b>31(8.0%)</b>	<b>355(92%)</b>		
<b>Occupation</b>				0.214
Doctor/dentist	0%	28(7.3%)	9.3	
Engineer	1(0.3%)	32(8.3%)	10.9	
Teacher	2(0.5%)	31(8.0%)	11.2	
Student	10(2.6%)	62(16.1%)	10.6	
Housewife	12(3.1%)	133(34.5%)	11.7	
Others	6(1.6%)	69(17.9%)	10.3	
<b>Total</b>	<b>31(8.0%)</b>	<b>355(92%)</b>		
<b>Monthly Income</b>				0.843
20,000- 30,000	5(1.3%)	66(17.1%)	10.4	
31,000-40,000	3(0.8%)	29(7.5%)	11.4	
41,000-50,000	2(0.5%)	20(5.2%)	11.9	
50,000	2(0.5%)	46(11.9%)	10.7	
Others	19(4.9%)	194(50.3%)	10.4	
<b>Total</b>	<b>31(8.0%)</b>	<b>355(92%)</b>		

(p-value>0.005)

## DISCUSSION

Dental anxiety is a fear or response due to some real facts or by the lack of information regarding procedures by the patient whereas dental phobia can be best explained as a type of fear which has nothing to do with the real circumstances and cannot be expressed by patients in words.<sup>11</sup> In current study females tends to show more anxiety level as compared to men which is consistent with the findings of studies conducted by Stabholz A et al<sup>12</sup>, Malvania<sup>13</sup>, Cristospher et al.<sup>14</sup> This finding may be due to the fact that women express their fear more openly compared to males. Literature also suggests that women show less tolerance to pain hence they visit dentists frequently as compared to men and tend to exhibit greater anxiety. Another study conducted by Filippo et al<sup>18</sup> concluded that dental anxiety can occur irrespective of gender and there is no association between dental anxiety and gender which contradicts the findings of present study. In Argentina and Indonesia there was greater prevalence of anxiety noted in males.<sup>17</sup> Also results of Zac M<sup>15</sup>

study contradicts this findings as it stated that dental anxiety can occur in any individual irrespective of their gender.

Administration of local anesthetic and pain during extraction is the commonest fears of patients. Many studies have shown a relationship between pressure of injection with pain and anxiety.<sup>16</sup> The scores recorded for dental anxiety and extraction is lower in present study when compared with the findings of Cristopher et al<sup>14</sup> which gave the vales as (2.70±0.94) for RCT and (2.53±1.18) for extraction. But in this study we found out greater levels of anxiety for scaling/polishing i.e (1.27=0.45) for scaling. This contradicts Stabholz and Pertz<sup>12</sup> study that ranked scaling as the second most anxiety provoking procedure.

Results of present study also suggest that there is a relationship between dental anxiety and level of education. Individuals with the 16 years of education inspite of good knowledge about their dental treatment showed increased levels of anxiety when compared with those with 10 or less years of education. In current study it is also seen that younger patients between 18-26 and showed greatest anxiety among all age groups which supports the findings of Heaton J et al<sup>10</sup> which reported that younger patients were more anxious about their dental procedure. There was a decline in dental anxiety score noted with the age. This might be due to the fact that with age and experiences generally people learn to cope up with such situations in a better way. These results are congruent with Zac M<sup>15</sup> finding, he also found mean DAS as 14 which is slightly higher than the mean anxiety score of our study i.e 11. Dental status and frequency of brushing was associated with the occurrence of anxiety.

Hence we can conclude that frequency of dental anxiety is low in patients of Dow International Dental College. Limitations of this study were small sample size which was not representative and large enough to gauge such differences. Large scale studies are suggested in future on similar topic. Reason for low level of anxiety can be faulty inclusion as only consenting and cooperative participants were included in this study leading to selection bias which is the limitation of this study.

There were more females included in this study which is another potential bias and might have resulted in greater anxiety levels in females. Moreover, in past few decades dental health promotion is widely being carried out though social media, print media and oral health related campaigns which accounts to the decline in the anxiety scores.<sup>17</sup>

## CONCLUSION

It was concluded that dental anxiety is associated with factors like gender, marital status, level of education,

dental procedure, oral health status, frequency of brushing. Females demonstrate greater scores of dental anxiety than men. Individuals were more anxious about local anesthetic injections and extractions. Anxiety is not found associated with factors like age, occupation, income, negative dental experience. Current study suggests that the occurrence of anxiety is low in patients presenting to Dow International Dental College for dental check-ups.

## REFERENCES

1. Ogle OE, Hertz MB. Anxiety control in the dental patient. *Dental Clinics of North America* 2012 ;56:1-6.
2. Milgrom P, Newton JT, Boyle C, Heaton LJ, Donaldson N. The effects of dental anxiety and irregular attendance on referral for dental treatment under sedation within the National Health Service in London. *Community dentistry and oral epidemiology*. 2010 ;38:453-9.
3. Humphris GM, Morrison T, Lindsay SJ. The Modified Dental Anxiety Scale: validation and United Kingdom norms. *Community dental health*. 1995;12:143-50.
4. Milgrom P, Weinstein P. Dental fears in general practice: new guidelines for assessment and treatment. *International Dental Journal*. 1993 ;43:288-93.
5. Coulthard P, Bridgman CM, Gough L, Longman L, Pretty IA, Jenner T. Estimating the need for dental sedation. 1. The Indicator of Sedation Need (IOSN)—a novel assessment tool. *British dental journal*. 2011 ;211(5):10-.
6. Weiner AA. Dental anxiety: differentiation, identification and behavioral management. *Journal (Canadian Dental Association)*. 1992 ;58:580-3.
7. Corah NL, Gale EN, Illig SJ. Psychological stress reduction during dental procedures. *Journal of Dental Research*. 1979 ;58:1347-51.
8. Newton JT, Buck DJ. Anxiety and pain measures in dentistry: a guide to their quality and application. *The Journal of the American Dental Association*. 2000;131:1449-57.
9. Buchanan H. Acquisition and measurement of dental anxiety: a summary paper. *Soc Sci Dent*. 2012;2:10-6.
10. Heaton LJ, Carlson CR, Smith TA, Baer RA, de Leeuw R. Predicting anxiety during dental treatment using patients' self-reports: less is more. *The Journal of the American Dental Association*. 2007;138:188-95.
11. Humphris GM, Morrison T, Lindsay SJ. The Modified Dental Anxiety Scale: validation and United Kingdom norms. *Community dental health*. 1995;12:143-50.
12. Stabholz A, Peretz B. Dental anxiety among patients prior to different dental treatments. *International dental journal*. 1999 ;49:90-4.
13. Malvania EA, Ajithkrishnan CG. Prevalence and socio-demographic correlates of dental anxiety among a group of adult patients attending a dental institution in Vadodara city, Gujarat, India. *Indian Journal of Dental Research*. 2011;22:179.
14. Udoye CI, Oginni AO, Oginni FO. Dental anxiety among patients undergoing various dental treatments in a Nigerian teaching hospital. *J Contemp Dent Pract*. 2005 15;6:91-8.
15. Morse Z. Dental anxiety is very high in the Republic of Kiribati. *South Pac Stud*. 2007;28:23-30.
16. Buchanan H. Acquisition and measurement of dental anxiety: a summary paper. *Soc Sci Dent*. 2012;2:10-6.
17. Newton T, Asimakopoulou K, Daly B, Scambler S, Scott S. The management of dental anxiety: time for a sense of proportion?. *British dental journal*. 2012;213:271-4.
18. Settineri S, Tatì F, Fanara G. Gender differences in dental anxiety: is the chair position important. *J Contemp Dent Pract*. 2005 15;6:1-5.

