

ASSESSMENT OF DENTAL TREATMENT RELATED ANXIETY AND ITS ASSOCIATION WITH THE SOCIODEMOGRAPHIC FACTORS

Hira Butt¹, Zainab Waheed², Hira Sheikh³, Dur E Shumyle³, Amna Nauman Khan⁴,
Nauman Rauf Khan¹

¹ Department of Oral Pathology, College of Dentistry, Sharif Medical and Dental College, Lahore.

² Department of Psychiatry, Kabir Medical College, Peshawar.

³ College of Dentistry, Sharif Medical and Dental College, Lahore.

⁴ Department of Community & Preventive Dentistry, College of Dentistry, Sharif Medical and Dental College, Lahore.

ABSTRACT

Objective: To assess the association of gender, level of education and marital status on the dental anxiety levels of patients.

Materials and Methods: This was a descriptive cross-sectional study conducted on 400 patients visiting the dental OPD of Sharif Medical and Dental College, Lahore from June 2019 to June 2020. A questionnaire regarding level of dental anxiety was given to the patients. Data were collected using a pre-validated scale with a Cronbach alpha value of 0.89; Modified Dental Anxiety Scale (MDAS). Chi square test was applied to see the association of socio-demographic factors on dental anxiety. P value ≤ 0.05 was taken as significant.

Results: Our data showed that the association between gender and level of dental anxiety was statistically significant (p-value 0.04). It was found to be no significant association of age, education level and marital status with level of anxiety (p=0.934, p=0.484, p=0.422) respectively.

Conclusion: Majority of males and females experienced moderate to low anxiety. It was seen that the greatest percentage of patients with moderate/low anxiety as well as high anxiety had tertiary education. A similar trend was seen in unmarried patients. The age group 18 to 29 years was the group that reported experiencing highest percentage of low/moderate anxiety as well as high anxiety.

Keywords: Dental anxiety, sociodemographic factors, Modified Dental Anxiety scale (MDAS), Dental treatment

INTRODUCTION

Dental anxiety has an encompassing influence on people's lives. It refers to the painful expectation due to some past dental experience or experiences framed by other people. It is one of the major impediments for people who seek dental services, as it refrains oneself from visiting the dental office for preventive and therapeutic treatments.⁽¹⁾ This leads

to a decline in oral health, increased DMFT scores, poor dentist-patient relationship, decrease in individual self-esteem⁽²⁾ and in severe cases may lead to septicemia, sinusitis and osteomyelitis of face.⁽³⁾

According to a study conducted by Noori et al on assessment of dental anxiety in pre and post dental treatment patients in Pakistan, it was reported that while patients in the pre-treatment group reported experiencing moderate, low and high levels of anxiety the post-treatment group patients reported feeling highly anxious only⁽⁴⁾. Development of dental anxiety is related with obnoxious and unpleasant stimuli encountered during a dental treatment that

Correspondence:

Dr. Hira Butt

Demonstrator, Department of Oral Pathology, College of Dentistry, Sharif Medical and Dental College, Lahore, Pakistan.

Email: hira.ah.butt@gmail.com

Contact: +923367160357

leaves people terrified and panic-stricken.⁽⁵⁾ Commonly people experience dental anxiety during tooth drilling which is associated with the use of air-rotator dental hand piece.⁽⁶⁾ Dental anxiety is thought to be mainly provoked by invasive procedures which include dental surgery, root canal treatment and tooth extraction.⁽⁷⁾ Choking and gagging during impression taking procedure is also thought to be a source of dental anxiety especially in children.⁽⁸⁾ Other factors contributing to dental fear and anxiety include the thought of blood during a dental procedure,⁽⁹⁾ scaling treatment⁽¹⁰⁾ and waiting for your turn.⁽¹¹⁾ The anticipation of pain during a dental treatment or receiving a local anesthesia leads to stressful conditions and changes in systolic, diastolic blood pressure and heart rate.⁽¹²⁾

Females and patients with poor education are particularly more susceptible to dental anxiety.⁽²⁾ Children are considered more anxious towards a dental treatment than adults as the events of anxiety decrease with age.⁽¹³⁾ Moreover, dentist's age, gender and experience have an impact on dental anxiety in patients.⁽²⁾ It was also seen in a study that student dentists tended to have high levels of dental anxiety at the start of their training which subsides with time as they gain sufficient dental education and clinical experience.⁽¹⁴⁾

On average anxious patients have a greater number of missing and decayed teeth in contrast to non-anxious patients as they stay away from dental treatment and delay their dental visit, until and unless it becomes absolutely necessary. This, as stated previously, can negatively impact patient's self-esteem and social life.⁽¹⁵⁾ Furthermore it is difficult to provide satisfactory care to anxious patient on account of them being less compliant and the patient generally being difficult to please.⁽¹⁶⁾

But dental anxiety levels can be decreased if patients are assured of pain-free and patient-friendly dental procedures. In order to deliver efficient and effective dental treatment, there is a need to combat patient's fears by establishing a friendly rapport with them. This also helps to create a comfortable environment in which patients, especially children feel safe.⁽¹⁷⁾ Using this approach, patients might become inclined towards more frequent dental appointments.⁽¹⁸⁾ Treatment is an effort on the part of parents, health professionals and the dentist himself. Patients who

are especially difficult to treat by established treatment procedures can be administered sedatives to ease their discomfort.⁽¹⁾ Anxious patients are likely to report pain of a greater extent and thus need more analgesics for pain relief.⁽¹⁹⁾

Before the start of dental treatment a dentist should be able to estimate the patient's level of anxiety so that he/she may be able to modify the treatment accordingly.⁽¹⁵⁾ Several scales have been developed for this purpose. Of these, the Modified Dental Anxiety Scale (MDAS) is the most widely accepted and used today.⁽²⁰⁾ It is reliable, valid and has excellent psychometric properties. The questionnaire can be answered relatively easily which makes it appropriate for clinical use.^(21, 22)

There are various studies available that have estimated the prevalence and determinants of dental anxiety but these studies are mainly based on the populations of the developed world.⁽²³⁾ It has been reported that culture has an impact on the level and characteristics of dental anxiety.⁽²⁴⁾ Thus factors that may influence anxiety in well-developed countries may not be the same for populations in a developing country such as Pakistan. In addition to this no study is present regarding assessment of levels of dental anxiety among patients presenting to dental OPD, Sharif Medical City Hospital Lahore. By identifying the factors that influence dental anxiety and cause a delay or avoidance of dental visit we can improve oral health save time, money and effort.⁽²⁾ The aim of this study was to assess the impact of age, gender, level of education and marital status on the dental anxiety levels of patients.

MATERIALS AND METHODS

A descriptive cross-sectional study was conducted on 400 patients visiting the dental OPD of Sharif Medical and Dental College, Lahore from June 2019 to June 2020 after ethical approval from Sharif Medical Research Centre Lahore (No. SMDC/SMRC/152-20). Demographics like name, age, gender, marital status and educational status were noted. Keeping the confidence level 95 %, anticipated population proportion 50%, margin of error 0.05, the sample size was calculated to be 385 but a sample of 400 was used to avoid data wastage.⁽²⁵⁾ Patients of both the genders were included in the study irrespective of their age, marital status and level of education. Patients who had not undergone past

dental treatment or were not willing to participate in the study were excluded. Informed written consent was taken from the participants before the study. A questionnaire regarding level of dental anxiety was given to the patients. Data was collected using a pre-validated scale with a Cronbach alpha value of 0.89; Modified Dental Anxiety Scale (MDAS)⁽²⁶⁾; to assess levels of dental anxiety. The questionnaire comprised of 5 questions. Questions 1 to 5 had five options. Non anxious response was given a score 1 and corresponded to option “a” and the extremely anxious response corresponded to option “e” and was given a score of 5 i.e. a = 1, b = 2, c = 3, d = 4, e = 5 (Total possible = 25)^(26, 27) Levels of anxiety was categorized as high level of anxiety (score ≥ 19) and moderate to low anxiety (score ≤ 18)⁽²⁶⁾.

Recorded data was coded and entered using SPSS statistical package version 23.0. Quantitative variables like age and MDAS score was presented as mean and standard deviation. Frequency and percentages were calculated for qualitative variables. Chi square test was applied to see the association of socio-demographic factors on dental anxiety. P value ≤ 0.05 was taken as significant.

RESULTS

This study included a total of 400 patients visiting the dental OPD of Sharif Medical and Dental College, Lahore to assess the levels of dental anxiety. There were 143 males (35.7%) and 257 females (64.3%). Mean age of the patients was 27.61 ± 11.87 years. Educational level and marital status of the patients was recorded as shown in table I.

Mean MDAS score was 12.85 ± 4.487 . It was evident that 345 patients (86%) reported moderate to low level anxiety (MDAS ≤ 18) and 55 patients (14%) showed high level anxiety (MDAS ≥ 19) as shown in figure I.

Our result showed that the association between gender and level of dental anxiety was statistically significant (p-value 0.04). It was evident that the males (33 %) and females (53%) predominantly experienced moderate to low anxiety. Although there was found to be no significant association of age, education level and marital status with level of anxiety (p=0.934, p=0.484, p=0.422) respectively, it was seen that the greatest percentage (57.8%) of patients with moderate/low anxiety had tertiary

education while the highest percentage of patients (9.5%) with high anxiety level had tertiary education as well. Similarly, it was seen that a greater percentage of unmarried patients fell in the category of both moderate/low as well as high anxiety (65.5% and 9.8% respectively). The age group 18 to 29 years was the group whose highest percentage (62%) reported to have moderate anxiety as well as high anxiety (10.3%) respectively. The statistical association between different situations of modified dental anxiety scale and various sociodemographic factors have been shown in table II .

The females generally reported a higher level of anxiety when presented with a situation in which they were to get their teeth drilled by a dentist. A greater percentage of females (12%) said that they would be extremely anxious in that situation with only 3% males in that category as shown in figure II

Similarly, it was observed that a higher percentage of females (17%) reported to be extremely anxious if they were to be injected a local anesthetic in their gum in comparison to 5% males as shown in figure III.

Table 1: Demographical data

Level of education	
Illiterate	1%
Primary	2.3%
Secondary	16.8%
Tertiary	67.3%
quaternary	12.8%
Marital status	
Married	24.8%
Unmarried	75.3%
Age	
Below 18	3.3%
18 to 29	72.3%
30 to 39	10%
40 to 49	4.3%
50 to 59	6.3%
60 to 69	3.8%
70 and above	0.3%

Table 2: Association of gender, Age and marital status with Dental anxiety

Question	p-value		
	Gender	Age	Marital status
If you went to your dentist for TREATMENT TOMORROW, how would you feel?	0.391	0.535	0.478
If you were sitting in the WAITING ROOM (waiting for treatment), how would you feel?	0.363	0.016	0.114
If you were about to have your TEETH DRILLED, how would you feel?	0.011	0.733	0.259
If you were about to have your TEETH SCALED AND POLISHED, how would you feel?	0.712	0.268	0.463
If you were about to have a LOCAL ANAESTHETIC INJECTION in your gum, above an upper back tooth, how would you feel?	0.005	0.021	0.052

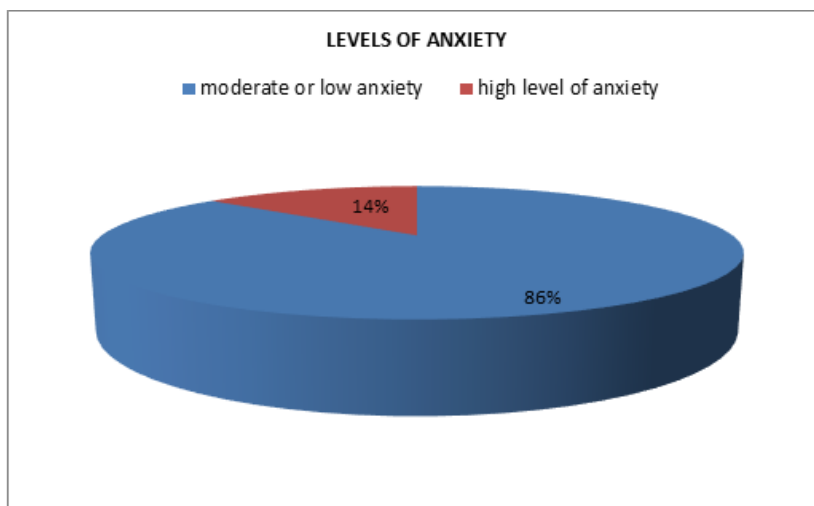


Fig 1: Levels of dental anxiety in patients

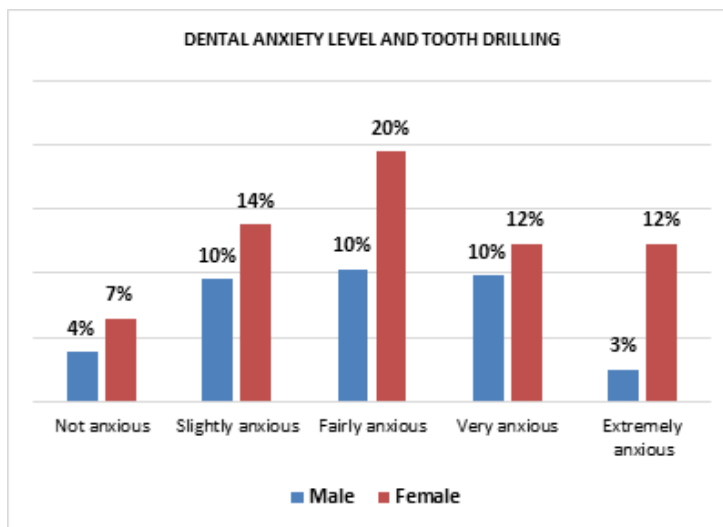


Fig 2: Level of anxiety and drilling of teeth by dentist

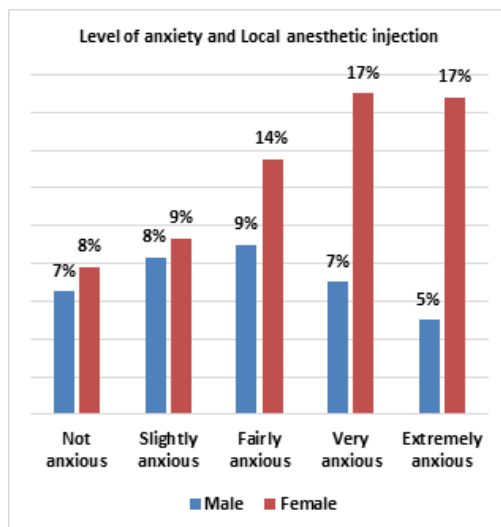


Fig 3: Level of anxiety and local anesthetic injection

DISCUSSION

Dental anxiety is considered a widespread problem that affects populations over a large socio-demographic spectrum. Fear of the unknown or past bad experience at the dentist, colors a person's perception and renders him unable to willingly seek dental care. This has a negative impact on the person's oral health as well as his or her general health and wellbeing⁽²⁸⁻³⁰⁾. The purpose of this study was to measure dental anxiety level among patients presenting to dental OPD, Sharif Medical City Hospital Lahore, Pakistan.

According to our study the mean MDAS score was 12.85 ± 4.487 . This result is in accordance with the anxiety levels described in other studies^(15, 31) where the mean MDAS score was found to be 12.34 ± 4.74 . On the contrary, other studies have reported a lower mean MDAS score 11.39 ± 2.7 ^(22, 32-34).

The association of dental anxiety with gender, age, educational status and social class has been documented by previous studies⁽²⁷⁾. The association of dental anxiety with gender has been studied in the past and many studies have reported there to be no significant association between the two.⁽³⁵⁻³⁷⁾ Our study reported a strong association between gender and dental anxiety in different situations. It was seen in our study that majority of males (5%) reported to be extremely anxious if they were to have a local anesthetic injection in their gum. These results are contrary to another study⁽²⁶⁾ where it was seen that majority of men (9%) reported to be extremely anxious if a drill was to be used on their teeth. Our

study also reported that an equal percentage (13.8%) reported not being anxious at all in case they had treatment scheduled tomorrow or if they had to get their teeth scaled and polished. These results were comparable to another study in which no anxiety by majority of male patients (73%) was reported when they had to get their teeth scaled and polished.⁽²⁶⁾ According to our study, the maximum percentage of females (16.8%) reported extreme anxiety if they were to be injected in the gum with a local anesthetic. These results are different from another study⁽²⁶⁾ where the highest percentage of females (9%) reported feeling extremely anxious if they were to get their teeth drilled. In our study, the greatest percentage of females (23%) reported no anxiety if they were to get their teeth scaled and polished which is very comparable to another study⁽²⁶⁾ where 63% females reported the same. According to another study, it was seen that 19% females in comparison to 9% males reported feeling highly anxious after dental treatment while a similar percentage of both the genders reported a high level of anxiety before dental treatment⁽⁴⁾. The reason behind a greater level of dental anxiety in females as compared to males is that females are more emotionally fragile and tend to express themselves easily. The females also have different biologic makeup, hormonal surges which can influence their personality in turn affecting their expression to stressful situations⁽³⁸⁾. According to a study conducted in Karachi, Pakistan on attributed factors of dental anxiety it was seen that the males were found to be more anxious than females⁽³⁹⁾.

In our study there was no statistical significance found in anxiety levels between different age groups which was in agreement with other studies^(15,31,35,40,41). However studies which were incompatible with our results stated that age has a strong association with dental anxiety.^(27,42,43) According to one study the highest percentage of participants (17.3%) who reported high anxiety belonged to the age group 30 to 39 years.⁽²⁶⁾ These results were contrary to our study where maximum level of high anxiety (10.3%) was reported by the age group 18 to 29 years. It was also reported in our study that none of the participants from age group 70 and above reported high level of anxiety. The reason behind reduction of dental anxiety with an increase in age can be due to development of a stronger personality, maturity and endurance to pain⁽³⁸⁾. These results are very similar to another study where it was seen that the least percentage of participant (4%) reporting high level of anxiety belonged to the age group 70 and above.⁽²⁶⁾ According to a study reported above⁽³⁹⁾ it was seen that the participants with age groups 18 to 30 and 31 to 45 years had an equal level of dental anxiety (35%).

Some researchers have concluded that patients having a higher educational status have reduced anxiety and as a result have better oral health.^(27,31,43) In our study we found no association between educational status and dental anxiety. These findings are similar to the ones reported by various other authors.^(29,35,40) According to one study the highest percentage of patients (32.3%) who reported moderate/low dental anxiety had education up to the secondary level and same was the group of educational level to report the highest percentage (1.8%) of high anxiety as well.⁽²⁵⁾ It has been previously reported that patients with graduate or intermediate level of education were found to be more anxious (64.5%) in comparison to patients with other levels of education⁽³⁹⁾. These results were contrary to our study where it was seen that the maximum percentage of patients with moderate/low and high level of anxiety both belonged to the patients who had tertiary level of education (57.8% and 9.5% respectively). The high level of dental anxiety in highly educated patients can be attributed to the increase in knowledge and awareness regarding dental treatment⁽³⁹⁾.

This study will help understand that various factors that influence the prevalence of dental anxiety among patients in different stages and situations

during dental treatment and will contribute literature by shedding light upon aspects that unravel findings on dental treatment related anxiety and their association with the socio-demographic factors.

CONCLUSIONS

- Majority of males and females experienced moderate to low anxiety.
- The greatest percentage of patients with moderate/low anxiety as well as high anxiety had tertiary education. A similar trend was seen in unmarried patients.
- The age group 18 to 29 years was the group that reported experiencing highest percentage of low/moderate anxiety as well as high anxiety.

RECOMMENDATIONS

In spite of advances in dentistry, anxiety regarding dental treatment remains prevalent among patients and poses a problem in dental treatment. It is very important to highlight the major contributors to dental anxiety as they can help us minimize these factors to improve Dental health care deliverance to the community and also to increase awareness among dental practitioners.

LIMITATION

This study was conducted on the patients visiting one institute, therefore the results cannot be generalized.

REFERENCES

1. Wahid U, Amin M, Choudhry Z, Ahmed MA. Dental anxiety level of patients presenting to operative dentistry department. *Pak Oral Dental J.* 2015;35(4):675-680
2. Gaffar BO, Alagl AS, Al-Ansari AA. The prevalence, causes, and relativity of dental anxiety in adult patients to irregular dental visits. *Saudi Med J.* 2014;35(6):598-603.
3. Mehrstedt M, John MT, Tönnies S, Micheelis W. Oral health-related quality of life in patients with dental anxiety. *Community Dent Oral Epidemiol.* 2007;35(5):357-63.
4. Noori S. ASSESSMENT OF DENTAL ANXIETY IN PRE AND POST DENTAL TREATMENT. *Pak. j. med.* 2019;8 (04):82-86.
5. Krikken J, Ten Cate J, Veerkamp J. Child dental fear and general emotional problems: a pilot study. *Eur Arch Paediatr Dent.* 2010;11(6):283-6.

6. Sghaireen MG, Zwiri AMA, Alzoubi IA, Qodceih SM, Al-Omiri MK. Anxiety due to Dental Treatment and Procedures among University Students and Its Correlation with Their Gender and Field of Study. *Int J Dent*. 2013;2013:647436.
7. Oosterink FM, De Jongh A, Aartman IH. What are people afraid of during dental treatment? Anxiety-provoking capacity of 67 stimuli characteristic of the dental setting. *Eur J Oral Sci*. 2008;116(1):44-51.
8. Kaakko T, Horn MT, Weinstein P, Kaufman E, Leggott P, Coldwell SE. The influence of sequence of impressions on children's anxiety and discomfort. *Pediatr. Dent*. 2003;25(4):357-64.
9. Armfield JM, Heaton L. Management of fear and anxiety in the dental clinic: a review. *Aust Dent J*. 2013;58(4):390-407.
10. Sanikop S, Agrawal P, Patil S. Relationship between dental anxiety and pain perception during scaling. *J Oral Sci*. 2011;53(3):341-8.
11. A Al Atram A, Singh S, Bhardwaj A, Mousa K, abu fadaleh M. Evaluation of Fear and Anxiety Associated with Instruments and Treatment among Dental Patients. *Int J Contemp Med Res*. 2016;3(9):2694-2696.
12. Liau FL, Kok S-H, Lee J-J, Kuo R-C, Hwang C-R, Yang P-J, et al. Cardiovascular influence of dental anxiety during local anesthesia for tooth extraction. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 2008;105(1):16-26.
13. Raja GH, Malik FS, Bashir U. Dental anxiety among children of age between 5 to 10 years visiting a teaching dental hospital in Islamabad, Pakistan. *J Ayub Med Coll Abbottabad*. 2015;27(3):587-90.
14. Al-Omari WM, Al-Omiri MK. Dental anxiety among university students and its correlation with their field of study. *J Appl Oral Sci*. 2009;17(3):199-203.
15. Saatchi M, Abtahi M, Mohammadi G, Mirdamadi M, Binandeh ES. The prevalence of dental anxiety and fear in patients referred to Isfahan Dental School, Iran. *Dent Res J (Isfahan)*. 2015;12(3):248-53.
16. Quteish Taani D. Dental anxiety and regularity of dental attendance in younger adults. *J Oral Rehabil*. 2002;29(6):604-8.
17. Alsarheed M. Children's perception of their dentists. *Eur J Dent*. 2011;5(2):186.
18. Dobros K, Hajto-Bryk J, Wnek A, Zarzecka J, Rzepka D. The level of dental anxiety and dental status in adult patients. *J Int Oral Health: JIOH*. 2014;6(3):11.
19. Mustafa O, Parekh S, Ashley P, Anand P. Post-operative pain and anxiety related to dental procedures in children. *Eur J Paediatr Dent*. 2013;14(4):289-94.
20. Dailey Y, Humphris G, Lennon M. The use of dental anxiety questionnaires: a survey of a group of UK dental practitioners. *Br Dent J*. 2001;190(8):450-3.
21. Humphris G, Freeman R, Campbell J, Tuutti H, D'souza V. Further evidence for the reliability and validity of the Modified Dental Anxiety Scale. *Int Dent J*. 2000;50(6):367-70.
22. Coolidge T, Arapostathis KN, Emmanouil D, Dabarakis N, Patrikiou A, Economides N, et al. 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.
23. Malvania EA, Ajithkrishnan C. Prevalence and socio-demographic correlates of dental anxiety among a group of adult patients attending a dental institution in Vadodara city, Gujarat, India. *Indian J Dent Res*. 2011;22(1):179.
24. Kamel A, Al-Harbi A, Al-Otaibi F, Al-Qahtani F, Al-Garni A. Dental anxiety at Riyadh Elm University Clinics. *Saudi J. Oral Sci.* 2019;6(2):101-12.
25. Faisal S, Zehra N, Hussain M, Jaliawala HA, Faisal AJJ. Dental anxiety among patients attending public and private dental hospitals of Karachi. *J Pak Dent Assoc* 2015;24(01):46.
26. Humphris G, Dyer T, Robinson P. The modified dental anxiety scale: UK general public population norms in 2008 with further psychometrics and effects of age. *BMC Oral Health*. 2009;9:20.
27. Humphris GM, Dyer TA, Robinson PG. The modified dental anxiety scale: UK general public population norms in 2008 with further psychometrics and effects of age. *BMC Oral Health*. 2009;9(1):20.
28. Lehrner J, Eckersberger C, Walla P, Pötsch G, Deecke L. Ambient odor of orange in a dental office reduces anxiety and improves mood in female patients. *Physiol. Behav*. 2000;71(1-2):83-6.
29. Oktay EA, Koçak MM, Şahinkesen G, Topçu FT. The role of age, gender, education and experiences on dental anxiety. *Age (years)*. 2009;20:29.
30. Armfield JM, Pohjola V, Joukamaa M, Mattila AK, Suominen AL, Lahti SM. Exploring the associations between somatization and dental fear and dental visiting. *Eur J Oral Sci*. 2011;119(4):288-93.
31. Erten H, Akarslan ZZ, Bodrumlu E. Dental fear and anxiety levels of patients attending a dental clinic. *Quintessence Int (Berl)*. 2006;37(4) :304-10.
32. 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 Qual Life Outcomes*. 2008;6(1):1-11.
33. Acharya S. Factors affecting dental anxiety and beliefs in an Indian population. *J Oral Rehabil*. 2008;35(4):259-67.

34. Fayad MI, Elbieh A, Baig MN, Alruwaili SA. Prevalence of dental anxiety among dental patients in Saudi Arabia. *J Int Soc Prev Community Dent.* 2017;7(2):100.
35. Kanegane K, Penha SS, Munhoz CD, Rocha RG. Dental anxiety and salivary cortisol levels before urgent dental care. *J Oral Sci.* 2009;51(4):515-20.
36. Locker D, Liddell A. Correlates of dental anxiety among older adults. *J Dent Res.* 1991;70(3):198-203.
37. McGrath C, Bedi R. The association between dental anxiety and oral health-related quality of life in Britain. *Community Dent Oral Epidemiol.* 2004;32(1):67-72.
38. Suhaib F, Mahmood U, Bakar UA, Sohail A, Liaqat S. Dental Anxiety in Patients in Lahore Medical and Dental College: A Cross Sectional Study. *J Islam Int Med Coll.* 2021; 16(1): 28-31.
39. BANA KFMA, Mazhar S, Sadia HJJJoLUoM, Sciences H. Attributed Factors of Dental Anxiety on MDAS Score: A Cross Sectional Study. *J Liaquat Uni Med Health Sci.* 2021;20(2):127-31.
40. Arslan S, Tarım Ertuş E, Ülker M. The relationship between dental fear and sociodemographic variables. *Erciyes Medical J.* 2011;33(4):295-300.
41. Tunc EP, Firat D, Onur OD, Sar V. Reliability and validity of the Modified Dental Anxiety Scale (MDAS) in a Turkish population. *Community Dent Oral Epidemiol.* 2005;33(5):357-62.
42. Stabholz A, Peretz B. Dental anxiety among patients prior to different dental treatments. *Int Dent J.* 1999;49(2):90-4.
43. Nascimento DLd, Araújo ACdS, Gusmão ES, Cimdões R. Anxiety and fear of dental treatment among users of public health services. *Oral Health Prev Dent.* 2011;9(4): 329-37.