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Anxiety of patients undergoing fixed partial denture treatment

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ABSTRACT:

Introduction: Anxiety and fear create an unpleasant experience for dental patients, which is important in shaping the mind set of the patients regarding dental treatments and future appointments as well. This study investigated the prevalence of dental anxiety in patients who visited a dental college clinic for FPD treatment in relation to the age, gender, educational level, past traumatic experiences.

Materials and methods: This is a cross sectional study in which a 100 patients who are undergoing FPD treatment were provided with a questionnaire on the day of FPD cementation, regarding the demographic characteristics and the level of dental anxiety experienced. The statistical analysis was performed using chi square test to calculate the frequency and percentages.

Results: By using statistical analysis by chi square test, it was found that females, younger age groups and participants with a lower education level had a greater likelihood of having increased dental anxiety, as compared to males, older populations and participants who had graduated college. Past traumatic dental experience was found to have an insignificant difference in the level of anxiety experienced by the patient.

Conclusion: Age, gender and educational level showed a significant association with dental anxiety while past traumatic dental experience showed no association with dental anxiety.

Keywords: Dental anxiety, FPD, dental treatment, demographic data.

I. INTRODUCTION:

Dental anxiety refers to a patient's specific reaction towards stress caused in association with dental treatment in which the stimulus is unknown, vague or not present at the moment (1).

Dental anxiety can cause a significant impact in any individual's life reflecting in poor dental health status and decreased oral health related quality of life. Hence, this can be a complication for both the dentist and the patient (2). One such effect of fear is the total avoidance or postponement of care, causing their symptoms to worsen (3). This drives patients to consider visiting dental offices only in the event of unbearable pain. This reinforces the pattern of dental treatment and feeling of anxiety (9). Also, the treatment time might prolong and such patients are more likely to be unsatisfied with treatment, regardless of the results achieved (12).

A patient is especially likely to fear the dental hand piece and the ultrasonic scaler, producing considerable noise and discomfort, which is essential for any patient undergoing FPD treatment. This is one of the most common procedures for which a patient seeks a dentist's services, among others.

Hence, it is imperative to consider the factors associated with dental anxiety so as to treat and promote better oral health. Studies are carried out to determine the impact of various variables on dental patients' fear and anxiety, including gender, age, education level, parental anxiety, and many others (4).

As a part of the comprehensive health care services offered to patients in the general population, the dentist is crucial in maintaining and enhancing oral health (5). Therefore, it is important to have in mind the patient's perspective of dental care. Before commencing treatment, the dentist should be able to detect the fear and anxiety of the patient so that appropriate management options can be devised (6).

Various scales have been developed with the intent of measuring anxiety objectively. Few of them are the Dental Anxiety scale (4), Dental Fear Survey (DFS) (7) and Corah's Dental Anxiety Scale (CDAS) (8). The Modified Dental Anxiety Scale (MDAS), first developed by Humphris et al, is based on the CDAS, but includes a question on local anesthetic injection (10). It is considered to be valid, reliable and easily comprehensible by the patient (11).

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The aim of this study was to assess the dental anxiety in patients undergoing FPD treatment. The study was conducted to evaluate the dental anxiety in patients undergoing FPD treatment and their relation to age, gender, education level and past traumatic experiences.

II. MATERIALS AND METHODS:

This cross- sectional study was conducted among 100 patients who had undergone FPD treatment in a dental college located in South India. Patients aged above 18 years, who had previously undergone scaling and vital abutment preparation and agreed to participate in the study were included in the study. Patients who were under anti- anxiety drugs, psychiatric patients, patients with intellectual disability and those who did not complete the form fully were excluded from the study.

The study was conducted with the help of a Farsi version of The Modified Dental Anxiety Scale (MDAS) (12). The patients were presented with the questionnaire on the day of FPD cementation. The questionnaire comprised of two sections: the first containing questions concerning the age, gender, educational level and past traumatic experiences; the second comprising of the Farsi version of the MDAS. The Farsi version of the MDAS included 5 brief multiple choice questions and concerns the patient's anxiety in the following situations:

a) Anticipating a visit to the dental clinic
b) Waiting in the dentist's office for treatment
c) Waiting in the dental chair for drilling of teeth
d) Waiting in the dental chair for scaling of teeth
e) Waiting in the dental chair for receiving a local anaesthetic injection

Possible answers ranged from "non anxious" with a value of 1 to "extremely anxious" with a value of 5. Summation of the values of all answers gave a score for dental anxiety, with a minimum possible score of 5 and a maximum of 25. Patients with scores of 11 or more were considered dentally anxious, 11 to 14 reflected moderate anxiety and scores from 15 to 19 showed high anxiety.

The questionnaire was designed based on literature, with the counsel of professors of the dental college. The questionnaire was first translated into the regional language (Tamil) and then re- translated to English by language specialists, which established their reversibility. The questionnaire was validated for the content by a group of professors.

The data was compiled in Microsoft excel sheet and transferred to version 22 SPSS software, using which the data was analysed. The descriptive statistics was applied using frequencies and percentages. The inferential statistics was obtained using chi square test to compare the demographic variables ($p<0.05$).

III. RESULTS:

The frequency and percentage distribution of the participants of the study based on the demographic data is outlined in Table 1. The age of the participants ranged from 18 to greater than 60 years. Out of the 100 participants, 51% were male and 49% were male. 59% had an educational background of senior secondary schooling or less, while 41% had finished graduation. 20% of the patients had a history of a past traumatic dental experience while 80% of the participants had no such negative experience.

Table 2 shows the frequency and percentage distribution based on dental anxiety. The responses are categorized into "not anxious", "slightly anxious", "fairly anxious", "very anxious" and "extremely anxious". A notable percentage of patients were "slightly anxious" while waiting in the chair for drilling and when informed about receiving LA injection, while a large percentage of the population was "not anxious" before any of the procedures.

The comparison between age and anxiety (Table 3) was done by categorizing the patients into 18-40 years, 40-60 years and >60 years. A statistically significant correlation between age of patients and anxiety was established using chi square test. A significant difference was found when comparing the different age groups when waiting in a dental chair for scaling, drilling and when informed about receiving an LA injection . It was not significant when anticipating a visit to a dental clinic and while sitting in the waiting room for treatment. Anxiety level when waiting in dental chair for scaling and drilling is maximum in 18- 40 year age group and when informed about receiving an LA injection, it was maximum in both 18- 40 and 40- 60 year olds.

On comparing gender and anxiety (Table 4),a significant difference was found when comparing different genders when waiting in dental chair for scaling, drilling and when informed about receiving an LA injection. It was not significant when anticipating a visit to dental clinic and while sitting in waiting room for treatment. In this study, females were found to have increased anxiety compared to males while waiting on a dental chair

for scaling, drilling as well when informed about receiving an LA injection.

Comparison of educational background and anxiety (Table 5) revealed that a statistically significant difference was found between participants with a schooling background compared to graduates while anticipating a dental visit, waiting on a dental chair for scaling, drilling as well when informed about receiving an LA injection. It was not significant for patients who are sitting in the waiting room. Patients with higher education have reduced dental anxiety compared to patients with school level education.

No significant difference was found when comparing participants with a past traumatic dental experience, compared to those who had no such history.

Table 01: FREQUENCY AND PERCENTAGE DISTRIBUTION BASED ON DEMOGRAPHIC DETAILS

		Frequency	Percent
AGE	18-40 yrs	46	46
	40-60 yrs	51	51
	>60 yrs	3	3
GENDER	Male	51	51
	Female	49	49
EDUCATION	<12th standard	59	59
	Graduate	41	41
POST TRAUMATIC EXPERIENCE	No	80	80
	Yes	20	20

Table 02: FREQUENCY AND PERCENTAGE DISTRIBUTION BASED ON DENTAL ANXIETY

		Frequency	Percent
ANTICIPATING A VISIT TO DENTAL CLINIC	Not anxious	93	93
	Slightly anxious	7	7
SITTING IN THE WAITING ROOM FOR TREATMENT	Not anxious	86	86
	Slightly anxious	14	14
WAITING IN DENTAL CHAIR FOR SCALING	Not anxious	52	52
	Slightly anxious	35	35
	fairly anxious	13	13
WAITING IN DENTAL CHAIR FOR DRILLING TEETH	Not anxious	32	32
	Slightly anxious	46	46
	fairly anxious	22	22
	Total	100	100
INFORMED ABOUT RECEIVING A LA INJECTION	Not anxious	27	27
	Slightly anxious	40	40
	fairly anxious	30	30
	very anxious	3	3

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TABLE 03: COMPARISON BETWEEN AGE AND ANXIETY USING CHI SQUARE TEST

	AGE	Not anxious	Slightly anxious	fairly anxious	very anxious	Chi square value	p value
ANTICIPATING A VISIT TO DENTAL CLINIC	18-40 yrs	44	2	0	0	3.748	0.153
	40-60 yrs	47	4	0	0		
	>60 yrs	2	1	0	0		
SITTING IN THE WAITING ROOM FOR TREATMENT	18-40 yrs	41	5	0	0	1.426	0.49
	40-60 yrs	43	8	0	0		
	>60 yrs	2	1	0	0		
WAITING IN DENTAL CHAIR FOR SCALING	18-40 yrs	21	13	12	0	18.033	0.001*
	40-60 yrs	31	20	0	0		
	>60 yrs	0	2	1	0		
WAITING IN DENTAL CHAIR FOR DRILLING TEETH	18-40 yrs	13	21	12	0	2.854	0.583*
	40-60 yrs	19	23	9	0		
	>60 yrs	0	2	1	0		
INFORMED ABOUT RECEIVING A LA INJECTION	18-40 yrs	10	20	14	2	14.939	0.021*
	40-60 yrs	17	18	16	0		
	>60 yrs	0	2	0	1		

*: SIGNIFICANT VALUE

TABLE 04: COMPARISON BETWEEN GENDER AND ANXIETY USING CHI SQUARE TEST

	GENDER	Not anxious	Slightly anxious	fairly anxious	very anxious	Chi square value	p value
ANTICIPATING A VISIT TO DENTAL CLINIC	Male	48	3	0	0	0.2	0.655
	Female	45	4	0	0		
SITTING IN THE WAITING ROOM FOR TREATMENT	Male	43	8	0	0	0.246	0.62
	Female	43	6	0	0		
WAITING IN DENTAL CHAIR FOR SCALING	Male	36	13	2	0	16.204	0.001*
	Female	16	22	11	0		
WAITING IN DENTAL CHAIR FOR DRILLING TEETH	Male	24	21	6	0	12.858	0.002*
	Female	8	25	16	0		
INFORMED ABOUT	Male	20	22	9	0	14.425	0.002*
	Female	7	18	21	3		

RECEIVING A LA INJECTION							

*: SIGNIFICANT VALUE

TABLE 05: COMPARISON BETWEEN EDUCATION AND ANXIETY USING CHI SQUARE TEST

	EDUCATION	Not anxious	Slightly anxious	fairly anxious	very anxious	Chi square value	p value
ANTICIPATING A VISIT TO DENTAL CLINIC	<12th standard	52	7	0	0	5.231	0.022*
	Graduate	41	0	0	0		
SITTING IN THE WAITING ROOM FOR TREATMENT	<12th standard	48	11	0	0	2.578	0.108
	Graduate	38	3	0	0		
WAITING IN DENTAL CHAIR FOR SCALING	<12th standard	25	26	8	0	5.98	0.05*
	Graduate	27	9	5	0		
WAITING IN DENTAL CHAIR FOR DRILLING TEETH	<12th standard	15	26	18	0	6.797	0.033*
	Graduate	17	20	4	0		
INFORMED ABOUT RECEIVING A LA INJECTION	<12th standard	11	20	25	3	14.489	0.002*
	Graduate	16	20	5	0		

*: SIGNIFICANT VALUE

TABLE 06: COMPARISON BETWEEN PAST TRAUMATIC EXPERIENCE AND ANXIETY USING CHI SQUARE TEST

	PAST TRAUMATIC EXPERIENCE	Not anxious	Slightly anxious	fairly anxious	very anxious	Chi square value	p value
ANTICIPATING A VISIT TO DENTAL CLINIC	No	75	5	0	0	0.346	0.557
	Yes	18	2	0	0		
SITTING IN THE WAITING ROOM FOR TREATMENT	No	70	10	0	0	0.748	0.387
	Yes	16	4	0	0		
WAITING IN DENTAL CHAIR FOR SCALING	No	43	29	8	0	3.183	0.204
	Yes	9	6	5	0		

WAITING IN DENTAL CHAIR FOR DRILLING TEETH	No	25	36	19	0	0.714	0.7
	Yes	7	10	3	0		
INFORMED ABOUT RECEIVING A LA INJECTION	No	20	33	24	3	1.499	0.683
	Yes	7	7	6	0		

IV. DISCUSSION:

When it comes to a person's oral health, anxiety has serious consequences and can present a significant obstacle to dental visits, which can lead to poor attendance or dental avoidance. Poor oral health or the reluctance in seeking specialty dental care may follow from this. Dental anxiety is also thought to have an impact on the quality of life, with poor oral health related quality of life being associated with very high levels of dental anxiety. Despite the technological advances made in modern dentistry, anxiety associated with dental treatment is widespread. This study sought to assess the various sociodemographic factors related to dental anxiety in a particular population.

In general, people are slightly anxious while waiting in the chair for drilling (46%) or while informed about having to receive an LA injection (40%).

The most frequently assessed factors in dental anxiety are age and gender, which are found to have a strong correlation with anxiety.

In this study, patients of younger ages experienced greater anxiety than those of older ages. This finding is in line with the idea that greater awareness and comprehension is obtained as a person ages and the anxiety reduces as a person matures. It might also be attributed to the fact that a person might have multiple exposures to a dental office as he/she ages, compared to a young adult as the need for dental treatment multiplies, which desensitises the patient's anxiety. This result is compatible with the findings reported by Humphris et al (10) and DoNascimento et al (13), in which age was found to be strongly associated with dental anxiety and younger subjects were reportedly more anxious compared to older ones before dental treatment. However, studies by Saatchi et al (12), Malvania et al (14) reported no significant correlation between age and dental anxiety.

In the current study, females were found to be more anxious regarding dental treatment compared to males. This result is in agreement with many other studies assessing anxiety such as those conducted by Saatchi et al (12), Arslan et al (15), Humphris et al (10) and Do Nascimento et al (13). These results can be explained by a number of variables, including the cultural context of the sample being studied, the various scales employed, the participants' willingness to accept their emotions, and the actual gender differences that were observed (4). As opposed to this, a study conducted by Kanegene et al (16) showed no correlation between gender and anxiety.

Higher educated patients might have better oral health or see the dentist more frequently (15). Patients with higher education have reduced dental anxiety, according to various studies like those by Humphris et al (10) and Do Nascimento et al (13), which are in agreement with the results obtained in this study. This might be attributed to the fact that educational level broadens the individual's mind and helps the person understand that dental treatments are for the person's own benefit, and the intent is not to harm. In contrast, the study of Saatchi et al (12) showed that differences in educational level did not affect the level of dental anxiety.

In the short term, perceived dental anxiety may not be eliminated by subsequent painless dental experiences because memories of unpleasant dental experiences are very strong (12). According to Do Nascimento et al (13), people who have had traumatic dental experiences in the past have higher levels of dental anxiety and fear. This discovery is contrary to the findings of the current study where past traumatic experience is found to have no significant correlation with dental anxiety. This proves that the dental team should strive to provide a pleasant experience to the patient every time, regardless of the previous experiences.

The current cross-sectional study was done on a small sample of participants visiting a particular South Indian dental college for FPD treatment during the study period. Studies on larger populations are necessary to determine the prevalence and scope of dental fear and anxiety in society in general. Additionally, more research

using various designs should be carried out to look into the various antecedents of dental anxiety.

V. CONCLUSION:

Within the limitations of this study, it was found that dental treatment-related anxiety had a significant correlation with gender and age among the study population. Females had higher levels of dental anxiety than males did. Younger individuals had increased anxiety compared to older adults. Additionally, anxiety was lower in those who had a better educational background. Past traumatic dental exposures had no impact on dental anxiety. To conclude, in this study, it was found that the study population experienced some level of anxiety related to dental care and adequate measures need to be taken to alleviate this anxiety.

REFERENCES:

(1) Jaakkola S, Rautava P, Alanen P, Aromaa M, Pienihakkinen K, Raiha H, et al. Dental fear : One single clinical question for measurement. Open Dent J 2009;3:161-6.
(2) QuteishTaani DS. Dental Anxiety and regularity of dental attendance in younger adults. J Oral Rehabil 2002;29:604-8.
(3) Maryam Tofangchiha, Chung-Ying Lin , Janneke F. M., Scheerman, Anders Broström, Hanna Ahonen, Mark D. Griffiths, Santosh Kumar Tadakamadla,and Amir H. Pakpour. Associations between fear of COVID-19, dental anxiety, and psychological distress among Iranian adolescents. BDJ Open (2022) 8:19
(4) Murad MH, Ingle NA, Assery MK. Evaluating factors associated with fear and anxiety to dental treatment—A systematic review. J Family Med Prim Care 2020;9:4530-5.
(5) Pasad AK, Baviskar PS, Nadgere JB, Iyer JV. Evaluation of anxiety in patients undergoing complete denture treatment. J Indian ProsthodontSoc 2021;21:66-73.
(6) Milgrom P, Weinstein P, Kleinknecht R, Getz T. Treating fearful dental patients: A patient management handbook. Reston, VA Reston Publishing Co; 1985.
(7) Newton JT, Buck DJ. Anxiety and pain measures in dentistry: A guide to their quality and application. J Am Dent Assoc 2000; 132: 1449-57.
(8) Kelly M, Steele JG, Nuttal N, Bradnock G, Morris J, Nunn J et al. Adult dental health survey, Oral health in the United Kingdom 1998, London: The Stationary Office; 2000.
(9) Caltabiano ML, Croker F, Page L, Sklavos A, Spiteri J, Hanrahan L, Choi R. Dental anxiety in patients attending a student dental clinic. BMC Oral Health.
(10) Humphris GM, Morrison T, Lindsay SJ. The modified dental anxiety scale: Validation and United Kingdom norms. Community Denta Health 1995;12:143-50.
(11) Humphris GM, Freeman R, Campbell J, Tuutti H, D'Souza V. Further evidence for the reliability and validity of the MDAS. Int Dent J 2000;50:367-70.
(12) 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. Dental Research Journal (2015) 12:3; 248-53.
(13) Do Nascimento DL, da Silva Araújo AC, Gusmão ES, Cimões R. Anxiety and fear of dental treatment among users of public health services. Oral Health Prev Dent. 2011;9:329–37.
(14) 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 J Dent Res. 2011;22:179–80.
(15) Arslan S, Erta E, Ülker M. The relationship between dental fear and sociodemographic variables. Erciyes Med J. 2011;33:295–300.
(16) Kanegane K, Penha SS, Munhoz CD, Rocha RG. Dental anxiety and salivary cortisol levels before urgent dental care. J Oral Sci. 2009;51:515–20.