

Dental Anxiety and Fear Levels among Outpatients in a Private Dental College in Chennai

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ABSTRACT

TOPIC: Dental anxiety and fear levels among outpatients in a private dental college in Chennai.

AIM : The aim is to evaluate dental anxiety and fear levels among patients visiting a private dental college.

MATERIALS REQUIRED: The five points modified Corah's Dental Anxiety Scale (MDAS) and Dental Fear Scale (DFS) were used. Descriptive analysis was done as well as Fisher's Exact Test and the Independent-t test to compare the anxiety and fear scores between groups.

RESULTS: Two hundred completed questionnaires were included in the study. Results showed that participants were anxious mostly about tooth drilling and local anesthetic injection. The overall response to Modified Dental Anxiety Scale (MDAS) showed that 53.5% were anxious which is statistically significant. The response to Dental Fear Scale (DFS) showed that moderate fear levels were 75%. The mean MDAS and DFS scores for males were comparatively higher than females. The age group 22-39 showed highest anxiety and fear levels.

Keywords: *Dental Anxiety, Dental Fear, Modified Dental Anxiety Scale, Dental Fear Scale*

Fear of the dental practice is one of the widespread distressing problems for dentists and public. [19] Fearful patients might neglect oral hygiene and delay treatment. Patients with high level of dental anxiety typically also report social and psychological disability. Dental fear may be distinguished from dental anxiety by the situational boundaries within which it occurs. Fear is generally regarded as a physiological, behavioural and emotional response to a feared stimulus whereas anxiety is a feeling of dread or worry focused on, yet temporally prior to, exposure to a feared stimulus. Fear and anxiety are highly related and are often used interchangeably in the fear literature. [16] Dental anxiety is related to age, gender, educational qualification, socio economic status, culture and varies from person to person. Identifying dentally anxious patients is crucial for management and treatment outcome.

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These patients are characterised by their frequent postponement of appointments and when in the dental clinic, they sit on the edge of chair, keep fidgeting, pacing, show repetitious limb movement, have startled reaction to noise, have generalised muscle tension “white knuckle syndrome” and show eye fixation like “deer in headlights” [14]

Objective assessment of dental anxiety can be done using anxiety questionnaires like Dental Anxiety Scale(DAS),Corah’s Dental Anxiety Scale (CDAS), Modified Dental Anxiety Scale (MDAS), Dental Fear Survey (DFS), State Trait Anxiety Scale (STAI), General Geer Fear Scale and Getz Dental Belief Survey.MDAS and DFS is more useful in a clinical setting for screening and diagnosing patients with dental anxiety.They have been both used in measuring of anxiety in many English and non-English speaking countries[3, 4, 12, 25, 28]Completion of the questionnaire does not increase patient fear, and has been shown to reduce state trait anxiety in clinical settings. [8]

MATERIALS AND METHODS:

Study Design:

The study encompasses two hundred outpatients in the waiting room of Saveetha Dental College and Hospitals. Both male and female patients were involved in the study. Patients aged 15-865 years, were included in the study. Study was approved by the scientific review board, Saveetha Dental College, Chennai. Collected and analysed data were subjected to power analysis to check the appropriateness of sample size. Thus, the sample size was considered an appropriate one to suggest significant differences between the variables of interest. Subjects were selected by convenience sampling. All the above specifications related to the number of patients and time duration for collection of data was so designed to minimize bias related to length of waiting period, diurnal variation, etc. Patients who were not willing to participate in the study, those were contradicted for the study, paediatric and adolescent patients, and elderly patients (above 65 years) were excluded.

Survey Instrument: The patients were asked to fill two questionnaires, the MDAS and DFS.

MDAS was used as an anxiety inventory to overcome the limitation of Corah's scale. In MDAS, there is an addition of item regarding respondent's feeling toward a local anaesthetic injection, which was ranked almost as highly as the drill in terms of fear and anxiety. In addition, the responses for each question are kept uniform in contrast to different sets of answers for each question employed in Corah's scale. The scale comprises five multiple choice items dealing with patient's subjective reaction to the dental situations like anticipating visit to dental clinic, waiting in the dentist's office for treatment, waiting in the dental chair for drilling of teeth, waiting in the dental chair for scaling of teeth and waiting in the dental chair for receiving local anaesthetic injection in upper back posterior teeth.

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Five possible answers in ascending order from 1 to 5 were provided for each question. The answers ranged from ‘Not anxious’, ‘slightly anxious’, ‘fairly anxious’ to ‘very anxious’ and ‘extremely anxious’. [11]

The interpretation of MDAS scale was based on the following criteria; Not anxious (<11), Moderately anxious (≥ 11), Moderately anxious (11-14), Highly anxious (15-18) and extremely anxious (≥ 19).

Dental Fear Scale(DFS)consists of 20 questions with five choices varying from ‘never’, ‘once or twice’, ‘few times’ to ‘often’ and ‘nearly every time’.

The scores for each of the twenty questions were summed to give the level of dental fear. The overall maximum score is 100. [17] The interpretation of DFS is based on the following criteria: Low Fear Level (<33), Medium Fear Level (33-67) and high Fear level (>67).

RESULTS:

Of the 200 patients, 96 were male and 104 were females. Table 1 shows distribution of study subjects based on age and gender.

Table 1: Distribution of study subjects based on age and gender.

Gender	Male		Female	
	N	%	N	%
Age				
15-14	28	39.4	43	60.56
25-39	50	48.01	52	50.98
40-64	13	68.42	6	31.57
Above 64	5	62.5	3	37.5
TOTAL	96	100	104	100

Table 2: Overall response to DAS questions

Response	Not Anxious		Slightly anxious		Fairly anxious		Very anxious		Extremely Anxious	
	N	%	N	%	N	%	N	%	N	%
Visiting Dentist	75	37.5	73	36.5	40	20.0	9	4.5	1.5	1.5
Sitting in Waiting room	56	28.0	80	40.0	43	21.5	18	9.0	1.5	1.5
Tooth Drilled	68	34.0	58	29.0	55	27.5	14	7.0	2.5	2.5
Teeth scaled	46	23.0	82	41.0	47	23.5	22	11.0	1.5	1.5
Local Anaesthesia	64	32.0	52	26.0	47	23.5	23	11.5	14	7.0

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Table 2 shows that participants responded with 37.5% that they were not anxious when anticipating a dental visit next day whereas only 1.5% were extremely anxious. The anxiety levels arose when asked about tooth being drilled (Fairly anxious-27.5%, very anxious- 7%, extremely anxious – 2.5%), having teeth scaled and polished (Fairly anxious-23.5%, very anxious- 11%, extremely anxious – 1.5%) and having while being injected with local anaesthesia (Fairly anxious-23.5%, very anxious- 11.5%, extremely anxious – 7%). It is found that the patients were extremely anxious about having their tooth drilled.

Between Gender:

Table 3:Prevalence of dental anxiety among male and female population.

Dental anxiety Scale	Male		Female		Total	
	N	%	N	%	N	%
Not Anxious	33	34.4	60	57.7	93	46.5
Moderately anxious	45	46.5	29	27.9	74	37
Highly Anxious	14	14.6	12	11.5	26	13
Extremely Anxious	4	4.2	3	2.9	7	3.5

Fisher's Exact Test = 11.36, p value= 0.008

Table 3 shows that the proportion of male who are dentally anxious (14.5%) are more compared to female (11.5%). Moreover, male are also dental phobic (4.2%) compared to female (2.9%) and it was found to be statistically significant.

Between Age Group:

Table 4: Prevalence of Dental Anxiety among various age groups

Dental Anxiety Scale	Age Group (In Years)									
	18-24		25-39		40-64		Above 64		Total	
	N	%	N	%	N	%	N	%	N	%
Not Anxious	29	52.7	36	46.8	22	37.9	6	60.0	93	46.5
Moderately Anxious	20	36.4	30	39.0	22	37.9	2	20.0	74	37.0
Highly Anxious	4	7.3	8	10.4	13	22.4	1	10.0	26	13.0
Extremely Anxious	2	3.6	3	3.9	1	1.7	1	10.0	7	3.5
Total	55	100	77	100	58	100	10	100	200	100

Fisher's Exact Test= 10.082, p value= 0.300

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Table 4 shows that the dental anxiety levels are highest in 25-39 age group. However, the results are statistically insignificant (p value = 0.3)

Dental Fear Prevalence: This was calculated using the dental fear scale.

Between Gender:

Table 5: Prevalence of dental fear among male and female population.

Dental Fear Scale	Male		Female		Total	
	N	%	N	%	N	%
	Low Fear Level	17	17.7	24	23.1	41
Moderate Fear Level	75	78.1	75	72.1	150	75.0
High Fear Level	4	4.2	5	4.8	9	4.5
Total	96	100	104	100	200	100

Fisher's Exact Test= 1.025; p- value=0.617

Table 5 shows that the population of male who have moderate dental fear (78.1%) are more compared to female (72.1%). Moreover, male are also more dental phobia (4.2%) compared to female (4.8%).

Age- Group Wise:

Table 6: Prevalence of dental anxiety among various age groups

Dental fear Scale	Age Group (Age)									
	18-24		25-39		40-64		Above 64		Total	
	N	%	N	%	N	%	N	%	N	%
Low Fear Level	13	23.6	15	19.5	8	13.8	5	50	41	20.5
Moderate Fear Level	41	74.5	56	72.7	49	84.5	4	40	150	75
High Fear Level	1	1.8	6	7.8	1	1.7	1	10	9	4.5
Total	55	100	77	100	58	100	10	100	200	100

Fisher's Exact Test= 12.014, p- value = 0.041

Table 6 shows that the dental fear levels are highest in 25-39 age group. However the results in variations are statistically insignificant. (p value= 0.041)

DISCUSSION:

The present study was carried out to assess the dental anxiety among the adult patients at Saveetha Dental College and Hospitals, Chennai. This dental college and hospital, can be a suitable setting to carry out anxiety related studies as all the dental treatments are provided under a single roof by different specialty departments and people from various socio-demographic backgrounds will be accessible under a clinic.

Prevalence of dental anxiety in the present study was found to be 53.5%, which suggests that despite the technological advances made in modern dentistry, anxiety associated with dental treatment was widespread in the study population. Prevalence was higher than that reported in other studies [2,5,10,13,15,20,24,26,27] in which the prevalence rates ranging from 3 to 32% were observed in the patients attending dental clinics. This difference can be attributed partly to the methodological differences, cultural differences or geographical variation.

At the cut off value of ≥ 19 for MDAS score, 3.5% of the patients had extremely high level of dental anxiety; this was similar to the findings of Acharya (2.2%) among Indian population [1]. The percentage of people with dental anxiety was less when compared with Western countries like UK (11%) [6], Northern Ireland (19.5%) [7], Turkey (23.5%) [25] and Finland (3%) [7]. The study showed that the mean anxiety score decreasing with age. This is in agreement with the studies by Acharya [1], Settineri et al. [18], Yuan et al. [28] and contrary to the findings of Tunc et al. [25] and Thomson et al. [23], who showed positive correlation of dental level with age.

Males were found to be more dentally anxious when compared to females. Anxiety levels for the age group when compared for dental anxiety did not reveal statistically significant difference. Anxiety scores were higher for the subjects above 20 years of age. Almost similar results have been reported by Thomson *et al* [24] and Stabholzet *al*, [20] have reported that anxiety was higher among subjects in the age group 35-44 years. None of the studies showed statistically significant difference.

The sense of fear to stimuli varies noticeably because each individual has special fear responses due to different stimuli during dental treatments. This study revealed that feeling the vibrations of the drill and feeling the needle injection were the most common fear from dental procedures. This is consistent with previous studies [9, 17, 21, 22]

CONCLUSION:

It can be concluded from the present study that the prevalence of dental anxiety and fear was relatively more in this south Indian Tamil speaking population and men were more anxious about dental visits. Among the dental procedures, tooth drilling and local anaesthetic injection, were most common reasons for anxiety. More information should emerge in this field since specialties in dentistry are becoming more available to the public, and except for paediatric dentistry, none has given adequate attention regarding patient management prior to and during specific dental treatments. The development of dental anxiety can be minimised with pain control, behaviour

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management, and consideration of patient as a whole. The inclusion of behaviour sciences in dental curriculum and the integration of ethical considerations in the field of dental educations could help to improve the scenario.

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