



ANXIETY TOWARDS DENTAL TREATMENT AMONG ADULT PATIENTS ATTENDING A DENTAL INSTITUTION IN PATNA, BIHAR

Dental Science

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ABSTRACT

Aim: To assess level of anxiety towards dental treatment among adult patients attending a dental institution in Patna, Bihar.

Methodology: A descriptive cross-sectional study was conducted among 120 patients visiting the dental hospital selected by convenience sampling method. A self-administered questionnaire was used to evaluate the level of anxiety among the patients. The Modified Dental Anxiety Scale (MDAS) was used to evaluate the degree of anxiety among study participants. SPSS 21 was used, and data were analyzed using factorial ANOVA. Difference between two groups was determined using student t-test and the level of significance was set at $p < 0.05$.

Results: The prevalence of dental anxiety among the study population was 92.5%. Higher level of anxiety was exhibited by participants toward dental treatment procedures. The factors like reason for dental visit, time of dental visit and past dental experience were found to be significantly associated with dental anxiety levels among the study subjects.

Conclusion: The prevalence of anxiety towards dental treatment among the study population was considerably high. Among the dental procedures, tooth drilling and local anaesthetic injection, were the most common reasons for anxiety.

KEYWORDS

Dental anxiety, dental treatment, Modified Dental Anxiety Scale,

INTRODUCTION:

Over recent decades, the everyday clinical practice of dentistry has benefited from major advances in techniques, technologies and materials. At the same time, public awareness of oral health has improved. Despite these gains, anxiety related to the dental environment and to specific dental treatments is a problem suffered by many patients worldwide, and it remains a significant challenge in providing dental care.¹ Anxiety associated with dental treatment has been ranked fifth among common fears in a general population.² Dental anxiety is defined as "a patient's response to stress that is specific to dental situations". Generally, dental treatment is related to psychological and physical discomfort.³

Dental anxiety is still a serious barrier to dental treatments⁴ leading to avoidance behaviors, resulting in lack of regular dental care and delay in seeking necessary treatment. It is also widely assumed that avoidance behavioral patterns of dental care and treatment have a detrimental effect on dental health.⁵ The occurrence of dental anxiety has been attributed to factors such as personality characteristics, traumatic dental experience in childhood (conditioning experiences), vicarious learning from dentally anxious family members or peers, perception of body image, blood injury fears, and pain reactivity. It is also related to age, gender, educational qualification, socioeconomic status, and culture and varies from person to person.⁶

Dentists consider anxious patients to be problematic and unreliable and to have a tendency to complain. Such patients often become irritable, angry and frustrated during treatment, and dental professionals find treating them time consuming and unprofitable.⁷ Despite the advances in technology, dental materials, and increased oral health awareness, a significant percentage of people suffer from dental anxiety.⁸

Various questionnaires have been used for the objective assessment of dental anxiety, but Modified Dental Anxiety Scale (MDAS) is more useful in a clinical setting for screening and diagnosing patients with dental anxiety.⁹ The MDAS is established by Humphris et al. based on the Corah's Dental Anxiety Scale (CDAS).⁹ Existing data suggest that completion of the questionnaire can significantly reduce state anxiety in the practice setting.¹⁰ It is valid and reliable and has good psychometric properties. Answering is easy, quick, not anxiety provoking, and therefore, suitable for clinical uses.⁶

Identifying anxious individuals can enable the dentist to anticipate patient's behavior and be better equipped with measures to help

alleviate patient's anxiety.⁸ Thus, this study was conducted to assess the level of anxiety towards dental treatment and factors associated with it among adult patients attending a dental institution in Patna, Bihar.

METHODOLOGY:

A descriptive cross-sectional study was conducted among the patients visiting Buddha Institute of Dental Sciences & Hospital, Patna, Bihar. A survey was systematically scheduled and it was conducted in the month of September 2019. Ethical clearance was obtained from the ethical review board of the institution. Data had been obtained from a sample of 120 adult dental patients who presented at the outpatient department of the dental hospital. Convenient sampling method was used. Informed Consent was obtained from the patients after explaining the importance and objectives of the study. Patients of age 18 years and above and those who were willing to participate were included in the study. Patients with acute dental pain; with psychiatric disorders or psychological limitations which will hinder in understanding the questionnaire; those receiving antidepressants and those who declined to give consent were excluded from the study.

Investigator personally administered the questionnaire to the participants and helped the participants with the questions where they faced difficulty in understanding. The questionnaire comprised of three major parts inquiring about demographic details like age, gender and socio-economic status (Modified BG Prasad Socio-economic Classification, 2019¹¹); dental history (their reason and time for dental visit and past dental experience) and the MDAS to measure anxiety regarding dental treatment. Possible answers could range from "nonanxious" with a value of 1 to "extremely anxious" with a value of 5. The summation of values for all answers assembles a score for level of dental anxiety with a minimum of 5 and maximum of 25. Patients with scores of 0–10 were considered slightly/nonanxious. Scores from 11 to 14 were fairly anxious and scores from 15 to 25 were very anxious.⁶

STATISTICAL ANALYSIS:

The means and standard deviations of the measurements per group were used for statistical analysis (SPSS 22.00 for windows; SPSS inc, Chicago, USA). For each assessment point, data were statistically analyzed using one way ANOVA. Difference between two groups was determined using student t-test and the level of significance was set at $p < 0.05$.

RESULTS:

The present study included 120 adult patients who visited the dental

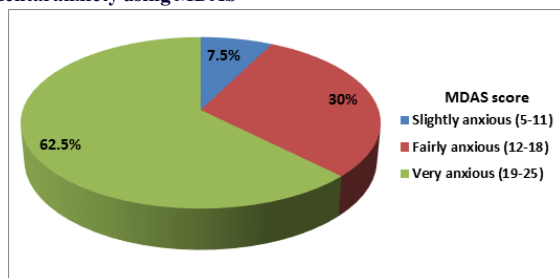
hospital. The study sample comprised 69 (57.5%) male and 51 (42.5%) female participants. The study subjects aged 18 years and above with the mean age of 36.58 ± 10.51 . The majority of the participants 40 (33.33%) were 28 – 37 years. The socio-economic status has been determined by Modified BG Prasad Classification, 2019. It was found that an overall majority of 62 (51.7%) were in upper class (Table 1).

Table 1: Distribution of study subjects according to demographic factors (n=120)

Category	n(%)
Gender	
Male	69(57.5)
Female	51(42.5)
Age (in years)	
18-27	26(21.67)
28-37	40(33.33)
38-47	36(30.00)
48-57	15(12.50)
>57	3(2.50)
Socio-economic status	
Upper class	62(51.7)
Upper middle class	36(30)
Lower middle class	22(18.3)
Upper lower class	0
Lower class	0

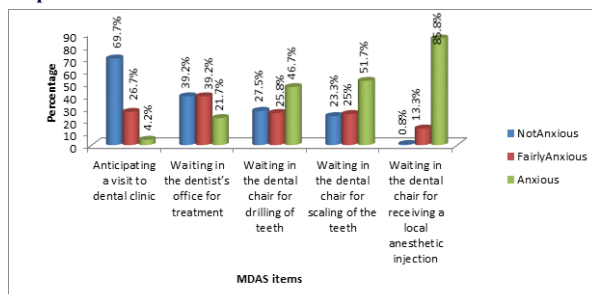
The dental history of the subjects revealed that majority of the subjects i.e. 54 (44.0%) visited the dental hospital with the chief complain of pain. The prevalence of dental anxiety among the study population was 92.5%. 62.5% had MDAS score in the range of 15 – 25, suggesting them to be as very anxious dental patients and 30% had scores ranging from of 11 – 14, indicating that they were fairly anxious towards dental procedures. (Graph 1)

Graph 1: Distribution of study subjects according to their level of dental anxiety using MDAS



Higher level of anxiety was exhibited by participants toward dental treatment procedures; majority of the participants were very anxious towards receiving a local anaesthetic injection (85.8%), followed by scaling of teeth (51.7%) and tooth drilling (46.7%). (Graph 2)

Graph 2: Distribution of study subjects according to their responses for MDAS items



The factors like reason for dental visit, time of dental visit and past dental experience were found to be significantly associated with dental anxiety levels among the study subjects as shown in table 2.

Table 2: Factors associated with dental anxiety (MDAS scores)

Variables	MDAS Score	
	Mean	SD
Reason for dental visit		
Routine check up	17.22	2.99

Pain	15.24	3.75
Cavity	16.57	3.78
Dirty teeth & bad breath	16.13	3.04
Bleeding gums	17.13	1.96
Missing teeth	12.91	3.51
Anova test	2.49	
p value	0.04	
Time of visit		
First dental visit	17.46	2.33
Visited dentist earlier	14.73	3.84
t test	17.39	
p value	<0.01	
Past dental experience		
Pleasant	13.02	2.89
Unpleasant	19.04	1.99
Anova test	60.69	
p value	<0.01	

DISCUSSION:

In the present study, the dental anxiety levels and factors associated with it among adult patients attending a dental institution was evaluated by using MDAS.

A total of 120 subjects were recruited in this study with the mean age of 36.58 ± 10.51 . The study sample comprised 57.5% male and 42.5% female participants similar to those in the study of Sinha et al⁶ where male and female subjects constituted 58% and 42% of the study sample respectively.

In the present study, majority of the patients (45.0%) had visited the dental hospital with the chief complain of pain. 65.8% of study subjects had visited a dentist once before, this finding is similar to the results of studies conducted by Appukuttan DP et al. (65.8%)¹² and D Satya Narayana et al. (66.0%)¹³.

Majority of the patients who had visited dentist before had pleasant experience which is consistent with the findings of the study conducted by Prakash et al.¹⁴ 19.2% had bad experience; this result was in contrast to that of the studies done by Appukuttan DP et al.¹¹ and D Satya Narayana et al.¹² where only 7.14% and 7.6% had bad experience in their previous dental visit respectively.

The prevalence of dental anxiety in the present study was found to be 92.5%, which suggests that despite the technological advances made in modern dentistry, anxiety associated with dental treatment was widespread in the study population. The prevalence was similar to that reported by Sinha et al (94%)⁶ and in contrast to that reported in studies done by Fotedar et al. (29%)¹² and Malvania et al (46%)¹⁵. This difference can be attributed partly to the methodological differences or geographical variation.

In the present study, the highest mean MDAS score was found to be significantly associated with reason for dental visit. The patients who came for routine dental check up (17.22 ± 2.99) had highest mean as compared to those who had a chief complain of pain (15.24 ± 3.75) followed by missing teeth (12.91 ± 3.51). Also, it was found that subjects who were visiting the dental hospital for the first time showed higher levels of dental anxiety and this was significantly associated with the mean MDAS score.

This can be attributed to the fact that, those who came for routine check up were visiting the dental hospital for the first time and were quite unfamiliar with the dental settings and unaware of what will happen, which made them more anxious. Whereas those who were suffering from pain and had missing teeth were quite sure that they have to undergo dental treatment and also they might have visited a dentist earlier so were quite familiar with the scenario. Hence were less anxious.

In a study conducted by do Nascimento et al¹⁶ and Acharya S¹⁷, it was found that subjects with previous traumatic dental experiences showed higher levels of dental anxiety. This finding is consistent with the results of the present study as it has been seen that majority of the study participants who had previous traumatic experience were very anxious and a statistically significant association was found between the past dental experience with the anxiety level.

The limitations of the study are cross sectional design, convenience

sampling and small sample size. Hence, considering this as a start point, further longitudinal studies are recommended to understand the real nature of changing attitudes regarding dental anxiety in patients. However, our study with its limitations provides a true assessment of dental anxiety faced by the patients visiting a dental college in Patna, Bihar, India.

CONCLUSION:

From the findings of the present study, it can be concluded that the prevalence of anxiety towards dental treatment among the study population was considerably high. It is recommended that efforts be directed by the dental professionals, to alleviate such anxiety of the patients in an effective manner by providing a healthy and an interactive environment along with proper education and motivation of such patients so that every dental visit encourages the patient to seek further dental care when required without any anxiety or fear regarding the dental procedure in the patients' mind.

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