

Dental anxiety among patients visiting a teaching dental hospital in Mangalore, India

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Abstract

Background: The assessment of dental anxiety among patients would provide information on their behavior and aid in planning treatment. The prevalence and factors affecting dental anxiety in new patients visiting a teaching dental hospital in Mangalore, India, were measured.

Materials and methods: The cross-sectional study utilized a self-reported questionnaire based on Corah's Dental Anxiety Scale (DAS) translated into Kannada.

Results: A total of 136 answered questionnaires were analyzed. The internal consistency of the scale assessed by Cronbach's alpha was 0.72. The prevalence of dental anxiety was 34% (DAS \geq 9). The mean DAS for dentally anxious females was statistically significantly higher than for the males ($p=0.027$). Mean DAS score was significantly ($p=0.05$) high for those who had visited a dentist earlier (11.76 ± 2.18). The highest mean DAS score (12.69 ± 2.24) was seen for those who had visited a dentist for tooth removal followed by cleaning, filling and dental check-up.

Conclusion: The prevalence of dental anxiety was seen to be 34%. Females seemed to have higher dental anxiety as compared to the males. Dental anxiety was seen to be most among the younger age of the sample population. Higher dental anxiety was reported among those individuals who had undergone dental extraction in their previous visit.

Key words: Anxiety assessment, Corah's Dental Anxiety Scale, Dental anxiety, Dental visit

Introduction

Fear is an unpleasant emotion or effect consisting of psychophysiological changes in response to realistic threat or danger to one's own experience. It is an emotional response to objective danger. Phobia is an irrational fear resulting in conscious avoidance of a specific object, activity or situation¹. Unlike fear, anxiety and its associated symptoms are anticipatory in nature; that is, they are often felt when a stimulus is not present or readily identifiable². Dental anxiety is a complex fear with a number of components involving personality or psychological traits as well as conditioning experiences and vicarious learning³. It is an important component of distress to patients in the dental operatory². Not only the dental treatment itself but even the anticipation of such treatment can give rise to fear and anxiety. Anxiety and fear of pain are often reported as causes of irregular

dental attendance, delay in seeking dental care or even avoidance of dental care³ and may lead to deterioration of oral and dental health^{2,4}. Moreover, dentists find phobic patients difficult to manage, thus, affecting the effective provision of dental care to such patients³. Assessment of level of dental anxiety among patients would provide information on their behaviour and aid in planning treatment.

Dental anxiety is most commonly measured using questionnaires and rating scales^{4,5,6}. Various scales have been composed to measure the many aspects of dental anxiety. A commonly applied questionnaire is Corah's Dental Anxiety Scale (DAS)⁵. Translated versions of it have proved to be valid and reliable measures of dental anxiety in culturally diverse populations³. The present

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study was conducted using the DAS to assess the dental anxiety among patients visiting the dental clinics of a teaching dental hospital in Mangalore, India.

Materials and Method

A questionnaire-based cross-sectional study was conducted between February and March 2007, among the new patients attending the dental clinics of Manipal College of Dental Sciences, Mangalore (a teaching dental hospital). The self-reported questionnaire was based on Corah's Dental Anxiety Scale (DAS) and translated into Kannada by an expert in the subject. It consisted of socio-demographic data, whether it was a first dental visit and if not, the reason for the last dental visit, and Corah's four item index.

The DAS contains four multiple choice items dealing with the patient's subjective reaction to the dental situation: a) anticipating a visit to dental clinic, b) waiting in the dentist's office for treatment, c) drilling of teeth, and d) scaling of teeth. Five possible answers in ascending order from 1 to 5 are provided, each question carrying a possible maximum score of 5, with a total possible maximum score of 20 for the entire scale. Dental anxiety was categorized into 'mild', 'moderate', and 'severe' depending on the DAS scores. DAS score 9-12 is 'mild'; 13-15 is 'moderate'; >15 is 'severe'.

A pilot study was conducted among 30 patients to pretest the questionnaire. A minor language change was made accordingly and sample size calculated. A total of 150 questionnaires were given to patients above 16 years of age who were waiting to be examined at the Department of Oral Medicine and Radiology. The patients included in the study were those who gave consent and were able to read and understand either Kannada (local language) or English.

SPSS ver. 11 was used for data analysis. The translated version of DAS was tested for internal consistency using Cronbach's alpha. The Chi square test was used for comparison of categorical data. Student's 't' test was used to compare the difference between two measures. Level of statistical significance was set at $p < 0.05$.

Results

Of the 150 questionnaires given to eligible patients, six were not returned and eight were incomplete. A total of 136 answered questionnaires were analyzed. The internal consistency of the scale assessed by Cronbach's alpha was 0.72. Approximately 43% of the respondents were males. Most belonged to the age range 20-30 years (38.2%) followed by 30-40 years of age (25%) and the least number of respondents were above 60 years of age (4.4%). Most had visited a dentist earlier (88.2%). The visits were for filling of teeth (30%), dental check-up (25%), cleaning of teeth (22.5%) and removal of teeth (13%).

Around 35% of the patients said they would look forward to it as an enjoyable experience for the question on anticipation of dental check-up and 33.8% said they would not care one way or the other. Most respondents (63.2%) said they would feel relaxed while waiting in the dentist's office. Similarly, 45.6% said they would feel relaxed while waiting in the dentist's chair while the dentist would get the drill ready to begin treatment. More than half of the participants (52.9%) said they would feel relaxed while waiting on the dentist's chair to have their teeth cleaned. Responses for each of the dental anxiety assessment questions were compared between males and females; most males (44.8%) said they would look forward to it as an enjoyable experience for the question on anticipation of dental check-up, whereas most females (35.9%) said they would not care one way or the other. Most males and females said they would feel relaxed while waiting in the dentist's office, waiting for the drill and waiting to have teeth cleaned. Among those who had visited a dentist before, a higher percentage (34.2%) said they would look forward to it as an enjoyable experience for the question on anticipating a dental visit, whereas, most of them said they would feel relaxed while waiting in the dentist's office, waiting for the drill and waiting to have teeth cleaned.

Most of the respondents in the age groups <20 years, 31-40 years and 41-50 years said they would not care one way or the other for the question on anticipation of dental visit, whereas most respondents in other age groups said they would look forward to it as an enjoyable experience. All said they would feel relaxed while waiting in the dentist's office, waiting for the drill and waiting to have teeth cleaned. Most of the respondents who had undergone filling of teeth earlier said they would not care one way or the other for the question on anticipation of dental visit and most of the those who had earlier visited a dentist said they would feel relaxed while waiting in the dentist's office, waiting for the drill and waiting to have teeth cleaned.

The prevalence of dental anxiety was 34% (DAS \geq 9), with mild anxiety being 27% and moderate anxiety nearly 6% (Figure 1). The mean DAS for dentally anxious females was higher than for the males (Table 1). This comparison was significant ($p=0.027$). The highest mean DAS score was not significantly ($p=0.326$) different for age group 31-40 years (12.60 ± 3.04). Mean DAS score was significantly ($p=0.05$) high for those who had visited a dentist earlier (11.76 ± 2.18). The highest mean DAS score (12.69 ± 2.24) was seen for those who had visited a dentist for tooth removal followed by cleaning, filling and dental check-up. Least mean DAS score was seen for those who had visited for teeth set. This comparison was not statistically significant ($p=0.353$).

Table 1: Comparison of mean DAS scores among subjects showing dental anxiety (DAS≥9)

	N	Mean (Standard Deviation)	Significance
Sex			
Male	15	10.53 (1.41)	P=0.027
Female	41	11.98 (2.30)	
Age			P=0.326
<20	10	11.0 (1.33)	
20-30	26	11.23 (1.84)	
31-40	15	12.6 (3.04)	
41-50	4	11.5 (1.73)	
51-60	1	12.0	
Previous Visit			P=0.05
Yes	51	11.76 (2.18)	
No	5	9.8 (1.30)	
Reasons			P=0.353
Check-up	15	11.3 (2.44)	
Filling	14	11.21 (1.76)	
Cleaning	5	11.8 (2.05)	
Tooth removal	16	12.69 (2.24)	
Teeth set	1	11.0	

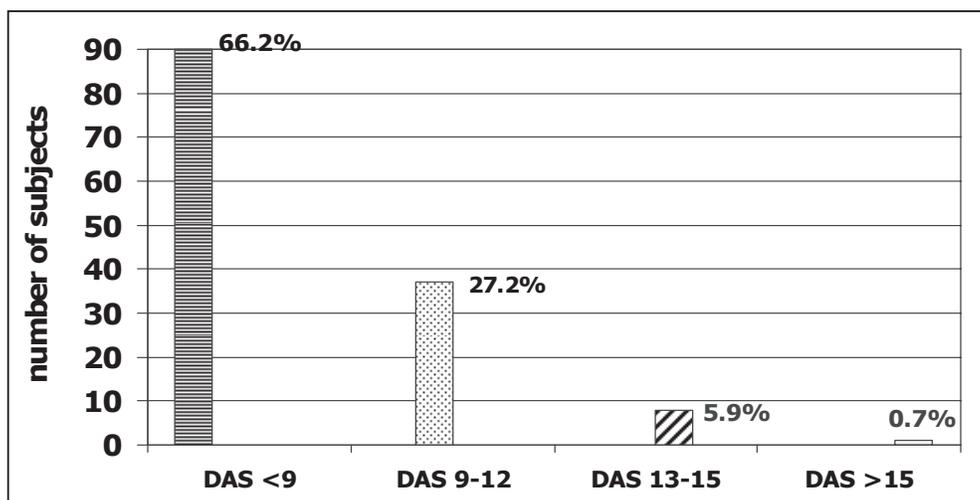


Fig. 1: Percentage Distribution of the Study Population Based On Anxiety (DAS≥9)

Discussion

The results of this study have shown that prevalence of dental anxiety (DAS ≥ 9) among new patients visiting the dental clinics of a teaching dental hospital is 34%. This is comparative to the study on similar population sample done by Ekanayake and Dharmawardena³ which showed the prevalence of 32%. The moderate dental anxiety of 6% in this study can be compared to a study among Danish adults⁷ which showed similar moderate anxiety (DAS scores 14-12) and extreme dental anxiety (DAS > 15) was found in 4.2% of the sample. The difference in prevalence could be due to variations in the measure of dental anxiety and the cut-off scores used to distinguish between those who were dentally anxious and those who were not.

In the present study, female respondents had a higher mean DAS score than males showing that females were more likely to show higher levels of dental anxiety. This is in accordance with other studies^{2,3,4,5}. Medical and psychological research on human responses to pain stimuli has generally found that women report higher levels of anxiety (they have lower thresholds) and exhibit less tolerance for pain at given stimulus intensities than men. It may also be that women are more likely to self-report, whereas men may not express their fears as openly as women². The study analysis of a community cohort at the age of 35 focused on the effects of gender and multimorbidity on quality of life and subjective distress showed that women generally reported lower

quality of life and higher distress than men. Relative to men, well-being in women was subject to more diagnostic (alcohol abuse/dependence, depression, generalized anxiety disorder, bulimia) and social influences (partner, promotion). The same factors predicted women's psychological and physical well-being, indicating a more holistic experience in women⁸.

This study also shows a mixed relationship between age and dental anxiety. The highest numbers of dentally anxious were in the age group 21-30 years, followed by the age group 31-40 years. Dental anxiety was not seen in the age group >60 years and only one was seen in the age group 51-60 years. The fact that more individuals were in the lower age group compared to the older age group could have affected this relationship between age and dental anxiety. This relationship between age and dental anxiety is similar to another study carried out in the Sri Lanka³. A longitudinal analysis revealed that dental fear, like many other general and specific phobias, declines with age⁹. However, there seems to be conflicting evidence as to this relationship as shown in the study by Udoye et al² where it is shown that age was inversely associated with dental anxiety.

The mean DAS score was higher for those who had visited a dentist earlier. This is contrary to the study by Ekanayake and Dharmawardena³, where they found no difference in levels of dental anxiety between the two groups. It could be generally expected that previous experience of a dental visit would alleviate the level of fear and anxiety in patients at subsequent dental visits, provided the initial experience was non-traumatic³. Moreover, when dental anxiety was related to the type of treatment received at the last dental visit, it is evident that those who had an extraction were more dentally anxious than those who had visited for filling, cleaning or check-up. In another study² where dental anxiety was assessed prior to receiving different dental treatments, dental anxiety prior to root canal therapy was found to be highest followed by extraction and filling. Anxiety prior to scaling was found to be the lowest.

Conclusion

A questionnaire-based cross-sectional survey to assess the prevalence of dental anxiety was conducted among 136 subjects visiting the dental clinics of Manipal College of Dental Sciences, Mangalore. The prevalence

of dental anxiety was seen to be 34%. Females seemed to have higher dental anxiety as compared to the males. Dental anxiety was seen to be most among the younger age of the sample population. Higher dental anxiety was reported among those individuals who had undergone dental extraction in their previous visit.

Clinical significance

Dentally anxious patients are often difficult to treat. Dental anxiety has been seen to be associated with missed dental appointments and dental avoidance. Assessment of dental anxiety may be recommended to assist the dentist in identification and management of dentally anxious patients.

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