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Prevalence of Dental Anxiety among Patients Visiting the Out Patient Department (OPD) of a Dental Institution in Panchkula, Haryana

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INTRODUCTION: Anxiety is a common problem frequently experienced by patients undergoing dental procedures in every dental setting. The present study aimed to assess the prevalence of dental anxiety among the patients visiting the Out Patient Department (OPD) of a Dental Institution in Panchkula, Haryana.

MATERIALS & METHOD: A sample of 600 adults (Females =298, Males = 302) with age ranging from 21 years to 65 years were enrolled in the study. The Modified Dental Anxiety Scale was used to measure dental anxiety among the study population. Chi Square test and ANOVA was used to find significant comparisons between the different variables assessed in the study. Further, Spearman's Correlation was used to analyse these variables with the mean anxiety scores of the patients.

RESULTS: The prevalence of anxiety among patients was found to be high. Reportedly the level of anxiety was found more in females than in males. It was revealed that with advancing age and higher education level, there was a decrease in level of anxiety, postponement of the dental treatment had a direct effect on dental anxiety. Previous unfavourable dental experience has a high impact on dental anxiety scores.

CONCLUSION: Evaluation of anxiety levels in the subjects of this study suggests that majority of them are anxious towards dental treatment. Dental anxiety is one of the major barrier in the utilization of dental services. There is a strict need of directing efforts towards alleviation of this hindrance to provide a good quality dental care to the needy population.

KEYWORDS: Dental Anxiety, Modified Dental Anxiety Scale, Negative Dental Experience.

INTRODUCTION

Anxiety, the reaction to unknown danger is a common problem experienced in dental practice. It can lead to treatment difficulties for both the patient as well as the practitioner. The degree of anxiety varies from patient to patient. It depends on age, gender, profession, intellect level, past experiences and other countless factors. Some patients experience only slight discomfort, while others experience a high level of anxiety. To a certain extent, little discomfort is obvious in both operative and non-operative procedures. The term Ódontophobia, literally meaning 'fear of the dentist' has been classified as an anxiety disorder as per the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).¹

The pathophysiology behind dental anxiety is a bodily response which influences the sympathetic nervous system leading to an increase activity of the cardiovascular system, thereby stimulating the excretion of the excitatory neurotransmitters adrenaline/epinephrine and norepinephrine. The

development of dental anxiety in individuals has been explained by various theories. Ivan Pavlov's theory of classical conditioning explains that previous negative or traumatic experiences may result in the development of acquired fear. It can be postulated that dental anxiety could be promoted due to the previous negative experiences during dental treatment. Locker et al reported that invasive or painful treatment could be related to dental anxiety.² It is not necessary that all the patients who undergo through painful procedures develop dental anxiety. Moreover, it may also depend on how vulnerable an individual is. Abrahamsson et al proposed a theory of multifactorial etiology combining cognition and conditioning experiences as causative factors behind dental anxiety.³

It would be relevant to consider dental anxiety as one of the common and major reason for avoidance of dental care thus resulting in worsening of personal oral health. High levels of

dental anxiety amongst those seeking dental care results in negative attitudes towards dental treatment and makes proper dental treatment difficult to achieve.⁴ Factors responsible for anxiety vary from person to person and hence, it is important to identify anxious patients and the reason behind their anxiety for successful management and satisfactory treatment.

The aim of this study was therefore, to evaluate prevalence of dental anxiety among patients visiting the Out Patient Department (OPD) of a Dental Institution in Panchkula, Haryana.

MATERIALS & METHOD

The present study was carried out among patients visiting the Out Patient Department (OPD) of a Dental Institution in Panchkula, Haryana from May, 2014 to October, 2014. The study was conducted to assess the level of dental anxiety by using the Modified Dental Anxiety Questionnaire. A total of 600 patients who gave informed consent and were aged between 21 to 65 years were enrolled in the study. Patients, who were uncooperative, suffering from any systemic disease or were on any anti-anxiety medication and those who did not give consent were excluded from the study.

Data was collected using the Modified Dental Anxiety Scale (MDAS) originally given by Corah NL.⁵ It is the most commonly used scale for diagnosis of patients who suffer with dental anxiety and it was developed primarily from the Corah Dental Anxiety Scale (CDAS). Demographic details of the patients were recorded. This included patients age, gender, educational qualification, occupation, and any favourable/unfavourable past dental experience(s) prior to administration of the questionnaire. A pilot study was conducted to pre-test and pre-validate the questionnaire. The Cronbach's Alpha value was calculated and found to be 0.85 suggesting good internal consistency. The anxiety level was categorized into lowly anxious (5–10), moderately anxious (11–18), and severely anxious ≥ 19 . A written, informed consent was obtained from the participants after explaining them the study protocol. An ethical clearance was duly obtained from the ethical committee of Dental Institution.

Statistical analyses of the data collected was done using Statistical Package for Social Science (SPSS) version 21.0. The Chi-square test was used to find significant differences between patients having a favourable/unfavourable previous dental experience while Analysis of Variance (ANOVA) was used to compare the level of significance of dental anxiety between different age groups. The correlation between the variables assessed in the study with their mean anxiety scores was determined using Spearman's correlation. The level of significance was kept at 5%.

RESULTS

A total of 300 patients participated in the study, out of which 298 were females and 302 were males. The age of the participants ranged from 21 to 65 years divided into three age groups with a majority (64%) of the patients being 21–40 years old (Table 1). Age wise comparison between three age groups was in relation to their mean total anxiety scores. A significant difference in relation to their mean total anxiety scores ($p=0.03$) showed a decreasing trend as with advancing age of the patient. No significant differences were found between the anxiety scores of the patient and the educational status. The number of past dental visits and anxiety scores were also not found to be statistically different. However, a significant difference was seen ($p=.001$) when anxiety scores of patients who had been through a favourable previous dental experience, were compared to those who had an unfavourable previous dental experience (Table 1).

Figure 1. highlights the mean dental anxiety scores of the study patients. The questionnaire contained 5 questions based on a 5 point likert scale ranging from "Not Anxious" to "Extremely anxious". The range of the scores lied from 5 to 25 and according to the Corah NL, the cut-off point was set as 19, above which indicated a highly dentally anxious patient, possibly dentally phobic.⁵ There was a decrease in number of subjects with increase in anxiety score. Dental anxiety score greater than cut-off value was observed in only 3.10% of the study participants.

Figure 2. depicts likeliness of postponement of dental visit in concern with anxiety. Out of total,

83% of the study subjects were willing to postpone their dental visit due to dental anxiety. A significant difference was seen in the mean anxiety score between patients with respect to their postponement of dental visit ($p=0.001$).

Table 2. depicts the Correlation between the variables assessed and the dental anxiety scores of the patients. Spearman's correlation showed a significant correlation between the mean anxiety score when compared with gender and postponement of dental visit. In contrast, age showed a significant negative correlation with anxiety score. The r values again emphasised the results achieved above that while age depicts an inverse relationship, postponement of the dental treatment has a direct effect on dental anxiety.

DISCUSSION

In the past few decades, there has been a tremendous awareness regarding oral health due to great progress in the dental field owing to the development of new techniques, materials and infection control. However, dental anxiety has remained a major problem for both the patients as well as the clinicians.⁶ As per Hmud R and Walsh LJ, one out of every six adults suffers from some form of fear and anxiety.⁷ The present study, aimed to assess the prevalence of dental anxiety among patients visiting the Out Patient Department (OPD) of a Dental Institution in Panchkula, Haryana. The Cronbach alpha coefficient of MDAS in this study was 0.85 which in accordance with previous studies conducted by Serra-Negra J et al.,⁸ Gupta G et al.,⁹ Minja IK et al.,¹⁰ whose Cronbach alpha coefficient(s) were 0.80, 0.83 and 0.86 respectively.

The demographic variables play a key role in the development of dental anxiety. In the present study, low levels of dental anxiety were found in aged persons when compared to subjects with younger age group. This was in agreement with the results of a few previous studies.¹¹⁻¹⁴ It can be postulated that there is a decrease in level of anxiety with advancing age. It is greatest in children and adolescents, and possibly due to misrepresented views of dental treatment due to their own bad experiences and influence of the negative attitude of family and society.¹⁵ This can be explained by the fact that the tolerance capacity increases when a person goes through stressful

situations in life journey and the behavioural characteristics of the individual also gets shaped by countless life experiences.¹⁶ Prevalence of anxiety was found to be more in females in our study. Similar results have been reported by many authors.¹⁷⁻²⁰ The reason behind this could be that due to orthodox gender roles, males tend to hide their fears.²¹ The other factor could be that generally the responsiveness of females to a specific stimulus is more than males. Moreover, physiological emotions (namely social phobia, panic, depression, stress and fear) are more common in females and high dental anxiety may be associated with the same.^{22,23}

Anxiety levels were found to be reduced with increase in education level. Similar results were reported by Acharya S,¹¹ Bjelland I et al.,²⁴ Milgrom P et al.,²⁵ and Do Nascimento DL et al.²⁶ The results of our study revealed that dental anxiety was a potential factor for postponement of dental procedure, similar findings were also documented in literature.^{27,28}

Patients who an unfavourable past dental experience had showed a higher level of anxiety & more negative attitude towards dental treatment, which was in concordance with several other studies.²⁹⁻³²

It is important to take into consideration the limitations of the present study. This is a cross-sectional study and it is important to note that dental anxiety is a subjective quality and its perception can change with time and circumstances. There is a need to carry out longitudinal studies with a bigger sample. Secondly, as it is a questionnaire study, chances of under-reporting, recall bias and social desirability bias are high.

CONCLUSION

It can be concluded from the findings of the study that prevalence of dental anxiety among the study subjects was high. Amongst the various demographic variables, gender, age, education level and past negative dental experience were found to impact dental anxiety. Further research work is needed to address the dental anxiety levels in different populations, which will help the dental professionals to manage the anxious patients in a better way. Dental health education

measures are required to control the levels of dental anxiety and thus improve patient attitude towards dental treatment.

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LEGENDS

Variable	Number of Subjects	Percentage	Statistical Analysis of Anxiety Scores
Age			
21-35 years	384	64	ANOVA
36-50 years	156	26	F = 3.341
51-65 years	60	10	P=0.03*
Gender			
Male	302	50.33	ANOVA
Female	298	49.67	F 1.437, p>0.05
Educational Qualification			
Intermediate	242	40.33	ANOVA
Graduate	298	49.67	F 1.437
Post graduate	31	5.17	P value >0.05
Uneducated	29	4.83	
Previous visit to dentist			
Yes	406	67.67	Chi Square
No	194	32.33	p>0.05
Previous dental visit experience			
Good (Favourable)	549	91.5	Chi Square
Bad (Unfavourable)	51	8.5	P=0.001*

Table 1. Demographic Details of the Subjects with statistical relation to anxiety scores

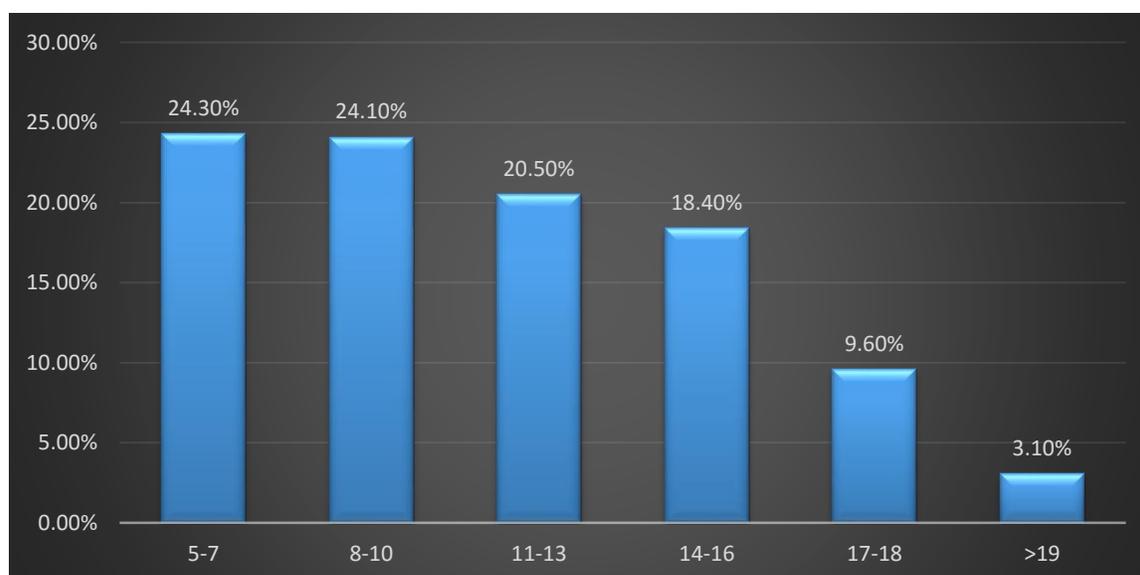


Figure 1. Mean dental anxiety scores of the study patients

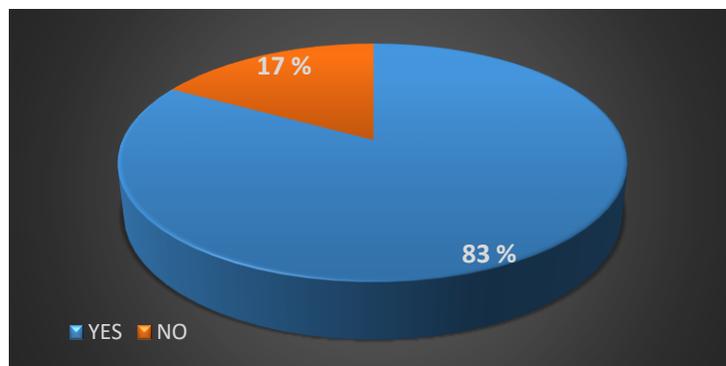


Figure 2. Likeliness to postpone dental visit (p=0.01)

Variables		Spearman's Correlation	P value
Gender	Mean Anxiety Score	0.94	0.03*
Age		-0.141	0.001*
Education		0.047	0.33
Postponement of dental visit		0.191	0.000*

Table 2. Correlation between variables assessed in the study and their mean anxiety scores.