

Dental Fear and Satisfaction with the Process of Orthodontic Treatment: A Questionnaire Study

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ABSTRACT

Background: To assess Patient fear and Satisfaction with the process of orthodontic treatment and to make Orthodontic visit a pleasantly experience for the patient.

Material and Method: A total of 30 participants in the age range of 14-25 years from north Gujarat area were taken as subjects for the study. The study used a self-constructed questionnaire formulated in English language and containing 23 questions regarding the level of awareness, knowledge and attitude towards orthodontic treatment. A total of 50 Questionnaires were distributed among both genders of patients visiting for follow up orthodontic treatment.

Results: In the present study it was found that 56.66% participants had mild anxiety(n=17), 30% had moderate anxiety(n=9),13.33% had high anxiety(n=4). The age group of the participants was not statistically associated with anxiety levels. However, a statistically significant association was observed between the education level of patient and their anxiety score. Statistics method: Chi-square test and crosstabs were done for statistics. The study showed that Higher the education level of the participant, lesser was their anxiety score (p=0.015).

Conclusion: Dental anxiety is prevalent among patients seeking orthodontic treatment. Patients with higher education were significantly less dentally anxious (p<0.01) about orthodontic treatments than patients with lesser education. Demographic characteristics such as gender and age of the patient had statistically no significant effect on DAS. This study supports the understanding that dental anxiety is multifaceted and contributing factors extend beyond traditionally accepted stimuli of drills and needles, which are not commonly used in orthodontic practice.

Keywords: Anxiety, Psychology, Compliance, Orthodontic treatment.

INTRODUCTION

Anxiety is often expressed as an imaginary threat to a vague, unpleasant feeling accompanied by the premonition that something undesirable is going to happen. It can also be described as a reaction to a perceived danger that is known to the individual and is often characterised by feelings of tension, worried thoughts, apprehension and physical changes like increased blood pressure, nausea and

palpitation etc. On the other hand, fear is a biological response and a reaction to a known danger or threat.^{1,2}

The terms anxiety, phobia and fear are often used interchangeably in the literature and differentiating one term from other is often complicated. Dental anxiety (DA) is defined as a patient's response to

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stress that is associated with a dental procedures⁴. Among the most feared situations within the general population, DA is ranked 5th⁵ with about 6-15% of the population suffering from high DA[6]. Studies done by Todd and Walker showed that nearly 43% of people avoid going to a Dentist unless they experience trouble with their teeth[7]. Curson and Coplans⁸ have also reported that anxiety contributes to delay in visiting a Dentist.

MATERIALS AND METHODS

A total of 50 participants in the age range of 14-25 years from north Gujarat area were taken as subjects for the study. The study was approved by ethical committee of Narsinhbhai Patel Dental College and Hospital (NPDCH), Visnagar, before the commencement of the study. Thirty participants having age group of 14-25 years irrespective of gender were selected among the people of north Gujarat, Who are undergoing orthodontic treatment in Department Of Orthodontics & Dentofacial Orthopaedics.

The study used a self-constructed questionnaire formulated in English language and containing 15 questions regarding the level of awareness, knowledge and attitude towards orthodontic treatment.

A total of 50 Questionnaires were distributed among both genders of patients visiting for follow up orthodontic treatment, in which 46 forms were returned and after further evaluation of submitted questionnaire 14 were rejected due to incompletely filed forms or with double answers for single question, finally 30 questionnaires were included in this study.

This questionnaire study was conducted as a cross sectional survey with convenient sampling technique among 30 patients visiting the Orthodontics Department at Narsinhbhai Patel Dental College and Hospital. After obtaining a consent from the participants the questionnaire was given to them and collected after its completion. A total of 30 Questionnaires were distributed among both genders of patients visiting for follow up of orthodontic treatment and only completed questionnaires were used for the study.

Table 1: Case Processing Summary.

Case Processing Summary						
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Q1 * SEX	30	100.0%	0	0.0%	30	100.0%
Q2 * SEX	30	100.0%	0	0.0%	30	100.0%
Q3 * SEX	30	100.0%	0	0.0%	30	100.0%
Q4 * SEX	30	100.0%	0	0.0%	30	100.0%
Q5 * SEX	30	100.0%	0	0.0%	30	100.0%
Q6 * SEX	30	100.0%	0	0.0%	30	100.0%
Q7 * SEX	30	100.0%	0	0.0%	30	100.0%
Q8 * SEX	30	100.0%	0	0.0%	30	100.0%
Q9 * SEX	30	100.0%	0	0.0%	30	100.0%
Q10 * SEX	30	100.0%	0	0.0%	30	100.0%
Q11 * SEX	30	100.0%	0	0.0%	30	100.0%
Q12 * SEX	30	100.0%	0	0.0%	30	100.0%
Q13 * SEX	30	100.0%	0	0.0%	30	100.0%
Q14 * SEX	30	100.0%	0	0.0%	30	100.0%
Q15 * SEX	30	100.0%	0	0.0%	30	100.0%

Table 2: Data showing all valid responses.

	Sex	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
Valid	30	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3: Equal gender wise distribution among participants.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	F	15	50.0	50.0	50.0
	M	15	50.0	50.0	100.0
	Total	30	100.0	100.0	

Table 4: Crosstab analysis for entire group of respondents as well as sub-groups.

			SEX		Total
			F	M	
Q1	A	Count	3	0	3
		% within SEX	20.0%	0.0%	10.0%
	B	Count	5	7	12
		% within SEX	33.3%	46.7%	40.0%
	C	Count	7	8	15
		% within SEX	46.7%	53.3%	50.0%
Total		Count	15	15	30
		% within SEX	100.0%	100.0%	100.0%

All of the patients were treated by the same clinician. All participants signed a consent form and it was emphasized that responses were confidential and would not affect treatment in any way. The Questionnaire consisted of demographic details of patient like age, sex and education. The next portion consisted of questions for evaluation of Dental Anxiety based on modified Norman Corah's Dental Anxiety Scale (DAS). Each question in the DAS had

five multiple choices where the first option denoted most relaxed graded as score '1' and progressively increasing to most anxious at option five graded as score '5'. The accumulated sum of all the questions of the DAS was 4 as minimum and 20 as maximum. Score of 4-9 denotes mild anxiety, score of 9-12 denotes moderate anxiety, score of 13-14 denotes high anxiety and score of 15-20 denotes severe anxiety or phobia. SPSS version 21 was used to for statistical evaluation of data. Chi-square test was applied to know significance.

Table 5: chi-square test for statistically significant differences.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.400 ^a	2	.183
Likelihood Ratio	4.560	2	.102
N of Valid Cases	30		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.50.

RESULTS

Out of the 30 patients, 15(50%) were male and 15(50%) were females. The mean age of the participants was 18.3 years (S.D $\pm$ 4.8). Majority of patients were either less than or equal to 18 years of age (n=23). As far as education is concerned majority of patients in this study were in High-School or Higher Secondary School (n=16). In the present study it was found that 56.66% participants had mild anxiety(n=17), 30% had moderate anxiety(n=9),13.33% had high anxiety(n=4) (Fig 1). The age group of the participants was not statistically associated with anxiety levels.

However a statistically significant association was observed between the education level of patient and their anxiety score. The study showed that Higher the education level of the participant, lesser was their anxiety score (p=0.015).

DISCUSSION

The purpose of this study was to assess the prevalence of dental fear and anxiety in orthodontic patients and its association with gender, age groups and the education of patient using a Corah's DAS questionnaire. The total sample size of study was 30 out of which 15 were male and 15 were females.

Spielberger et al. reported that subjects younger than 14 years of age may not have a balanced psychological character and this should be the minimum age limit for psychology studies. We therefore excluded those patients under 14 years of age from our study.

Even though the majority of studies have reported higher anxiety levels among females, no significant difference was found between males and females in this study among orthodontic patients. This can be best explained as majority of participants had higher educational qualifications. In this study, 56.66% participants had mild anxiety, 30% participants had moderate level anxiety, 13.33% participant had high anxiety.

In the present study, orthodontic patients had high percentages of mild and moderate anxiety as they were routinely visiting their orthodontist for treatment and also were more aware about the expected procedures than patients visiting for other dental procedures.

The limitation of study showing more inclination towards mild and moderate level anxiety among orthodontic patients could be due to the participants routinely visiting their orthodontist for follow up. Pierce and Kirkpatrick had suggested that men reported are less anxious than women in response to specific fear because they were not being truthful. And this indicates a reporting bias in men. In general, our study also found that the most common reason for anxiety among the participants was the fear of pain associated with the orthodontic treatment. Other factor that was included in our study was patient education level and it was found that the prevalence of anxiety drastically decreased in patients with higher education with statistically significant results (p= 0.015).

The reason behind this decrease in high and severe anxiety level in the highly educated patient's is the fact that they are more confident, show more trust toward their treating orthodontist and are well informed and educated about their dental problems.

In this study dental anxiety was evaluated using a self-reported measure. Future research is required on various other dimension of anxiety among orthodontic patients.

CONCLUSION

Dental anxiety is prevalent among patients seeking orthodontic treatment. Patients with higher education were significantly less dentally anxious ($p < 0.01$) about orthodontic treatments than patients with lesser education. Demographic characteristics such as gender and age of the patient had statistically no significant effect on DAS. This study supports the understanding that dental anxiety is multifaceted and contributing factors extend beyond traditionally accepted stimuli of drills and needles, which are not commonly used in orthodontic practice. The ultimate goal of orthodontist should be, to make the visits comfortable, relaxed and improve doctor-patient relationship. This will not only help the orthodontist to share basic information regarding treatment but will also minimise dental fear during painful procedures.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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