

Prevalence of Dental Fear and Anxiety among Orthodontic patients visiting Nobel Medical College

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ABSTRACT

Introduction: Anxiety is the state of feeling nervous or worried that something bad is going to happen. Dental anxiety is defined as a patient's response to stress that is associated with a dental procedure. The aim of our study is to investigate the anxiety status of dental patients visiting Orthodontic department at Nobel Medical College Teaching Hospital, Biratnagar.

Materials and Method: Total 80 ongoing orthodontic patients (M =21 F=59) who completed modified Dental Anxiety Scale questionnaire were included in the study.

Result: Majority of patients (65%) had moderate anxiety where as 25% had mild anxiety and around 9% had severe to extreme anxiety. Patients' age and education level had significant association with the level of dental anxiety.

Conclusion: Dental anxiety in orthodontic patients is unavoidable but needs appropriate counseling. Orthodontist's role is crucial in bridging the gap between patients' perception towards orthodontic treatment and the actual treatment.

KEYWORDS: Dental fear and anxiety, Nobel Medical College, Orthodontic patients, Prevalence

INTRODUCTION

Anxiety is the state of feeling nervous or worried that something bad is going to happen. Dental anxiety (DA) is defined as a patient's response to stress that is associated with a dental procedure.¹ Being scared to go to the dentist may end up in delaying or avoiding dental treatment. Dental fear and anxiety are often related to certain triggers like needles, drills or the dental setting generally. Among the most feared situations within the general population, DA is ranked 5th² with about 6-15% of the population suffering from high DA.³ Orthodontic treatment in our community is still in its nascent phase. Some of the patients visiting orthodontic department do not readily accept the comprehensive treatment because of dental fear and anxiety. The anxiety level in parents often influence the anxiety level in their children.⁴ Studies done by Todd and Walker showed that nearly 43% of people avoid going to a Dentist unless they experience trouble with their teeth.⁴ Regular visit to a dentist is delayed due to dental anxiety as

reported by Curson and Coplans.⁵ Roy et al reported patient concerns related to orthodontic treatment and orthodontic dental anxiety include patients' perception of orthodontic treatment, their relationship with the orthodontist and their staff, and treatment factors.⁶ Patients with higher education were significantly less anxious about orthodontic treatment than patients with lesser education.⁷ Demographic factors such as gender and age of the patient showed statistically minimal significant effect on DAS.⁷ Patient dental anxiety and state anxiety levels has been found to decrease after patients become familiar with their orthodontist and become accustomed to orthodontic treatment.⁸

Orthodontic treatment is newly evolving in this part of the world and its success depends upon various factors including patient and parent related factors such as dental anxiety. Considering the anxiety status of the patient appropriate measures could be taken before or during treatment so as to provide quality

orthodontic treatment. Hence, the aim of our study is to investigate the anxiety status of dental patients visiting Orthodontic department at Nobel Medical College Teaching Hospital, Biratnagar. 80 ongoing orthodontic patients (M =21, F=59) who completed modified DAS questionnaire were included in the study.

MATERIALS AND METHOD

A cross-sectional study was conducted in Department of Orthodontics, Nobel Medical College Teaching Hospital, Biratnagar, Nepal. The time period of the study was from Dec 2019 to Jan 2020. A total of 80 subjects including 59 female and 21 male patients who visited Orthodontic department, Nobel Medical College Teaching Hospital, Biratnagar from Dec 2019 to Jan 2020, willing to participate in the study were selected according to convenient sampling. Patients well versed in English language were included in the study. The samples were asked to complete the questionnaire in the waiting area after informed consent was obtained from each of the participants. The patients having difficulty in understanding the questionnaire were assisted by interns of Orthodontic Department.

Questionnaire included gender, age, education, duration of orthodontic treatment and Norman Corah’s Dental Anxiety Scale (DAS) was modified and used. Each question in the DAS had 5 multiple choices where the first option denotes most relaxed state scored as 1 progressively increasing to option five denoting most anxious graded as score 5.

The modified Dental Anxiety Scale (MDAS) questionnaire included the following questions.

1. How do you feel or did you feel during your first visit to orthodontist?
2. If you were to undergo an extraction of your teeth for the purpose of orthodontic treatment how would you feel?
3. How do you feel if you were to get your teeth drilled?
4. How did you feel while sitting on the dental chair for your orthodontic treatment?
5. If you were about to have your braces adjusted how would you feel?

RESULT

Out of the 80 patients, 59(73.8%) were female and 21(26.2%) were males. The mean age of the participants 19.7 (SD: 4.3). Mean duration of treatment of patients responding to the questionnaire was 12.7 months (SD: 8.8). As far as education is concerned, majority of

patients in this study were at intermediate level (n=31) followed by Bachelor (n=28), higher secondary (n=17) and Masters (n=4). Mean dental anxiety score (DAS) was 9.3 (SD: 1.8).

Majority of patients (65%) had moderate anxiety where as 25% had mild anxiety and around 9% had severe to extreme anxiety. (Table 1)

Table 1: MDAS score range and Frequency

MDAS Score Range	Frequency (%)	Mean MDAS Score (SD)
0-5 (not anxious)	1 (1.25%)	5
6-10 (Low anxiety)	20 (25%)	8.7 (1.4)
11-14 (Moderate anxiety)	52 (65%)	12.1 (1.1)
15-18 (High anxiety)	6 (7.5%)	15.7 (0.8)
19-25 (Extreme anxiety/Phobic)	1 (1.25%)	19

One way ANOVA was done to find out the association between Age and mean anxiety score and Education level of the participants and mean anxiety score. It was found that Age and Education level were significantly associated with Mean Anxiety score of the patients. Older the patient lesser was the mean anxiety score P=0.019 and higher the education of the patient lesser is the mean anxiety score P=0.035 (Table 2)

Table 2. Association of patients’ gender and education with Dental Anxiety Score (MDAS)

	Mean anxiety score (SD)	p-value
<i>Age</i>		
Below 15 years	10.5 (2.1)	0.019#
16 – 25 years	9.2 (1.6)	
Above 25 years	8.5 (1.4)	
<i>Gender</i>		
Female	9.6 (1.6)	0.005*
Male	8.4 (2.0)	
<i>Education</i>		
HS	10.3 (1.9)	0.035#
Inter	9.2 (1.8)	
Bachelor	9 (1.5)	
Master	8 (2.2)	
* Independent t-test # One-way-ANOVA Bold signifies statistically significant at p<0.05		

Independent t test was done to evaluate the association between Gender and Mean Anxiety Score and it was found that females significantly had high anxiety score than males $P=0.005$.

Figure 1 depicts the relationship between Age and Anxiety Score where as Figure 2 correlation between duration of treatment and Dental Anxiety Score

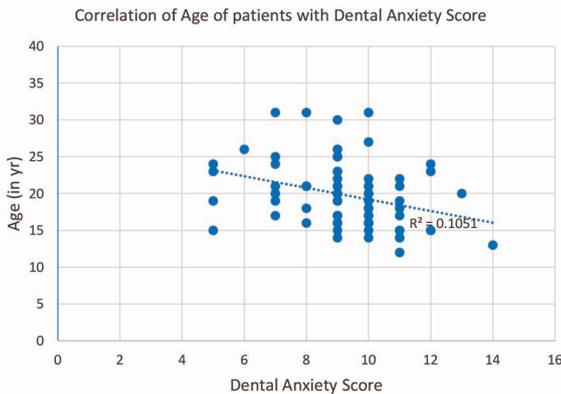


Fig 1. Correlation between Age of patients and Dental Anxiety Score

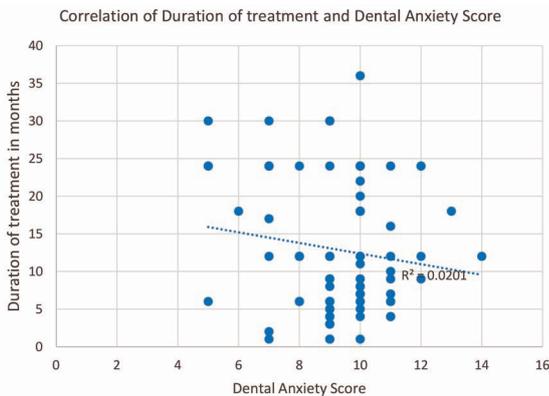


Fig 2. Correlation between Duration of treatment and Dental Anxiety Score

DISCUSSION

The objective of this study was to find out any relation between orthodontic patients related factors to influence the dental anxiety according to modified Corah's DAS. The study of dental fear and anxiety of Nepalese population during orthodontic treatment especially in southeastern region had not been reported in the literature. There were higher number of females (73.8%) in our study which was according to the obvious trend of females being more esthetically concerned. More patients in this region reported for orthodontic treatment during adolescence which is comparable to results obtained by Piya et al.⁹ However, Halwai et al

reported higher number of adult orthodontic patients.¹⁰ This could be because patients and their guardians are more concerned and are aware about necessity of the orthodontic treatment at this age.

Majority of the patients in our study had moderate anxiety (65%) during treatment. This was due to mild discomfort, sensitivity and pain experienced by majority of orthodontic patients. This value was slightly higher than the study by Jamal et al (51.33%) conducted in Dharan¹¹ which could be due to psychosocial difference between the two different study samples. Dental anxiety is seen in approximately 6-15% of the population and is a learned process of unpleasantness to one's own environment.^{12, 13} Similar finding was found in the present study where around 9% of patients had dental anxiety in its severe form.

The education level of patients and anxiety had significant association which may be due to more awareness of the treatment and confidence with their orthodontist in patients with higher education. This was in accordance with the findings by Surabhi R Jain et al⁷. Similarly our study showed that dental anxiety was higher in younger individuals which could be explained by the fact that younger patients were less concerned for the need for orthodontic treatment and parents brought them for the treatment in spite of their children's unwillingness. Humphris et al had similar findings.¹⁴

CONCLUSION

Dental anxiety in orthodontic patients is unavoidable but needs appropriate counseling. Orthodontist's role is crucial in bridging the gap between patients' perception towards orthodontic treatment and actual treatment. There is scope for further similar research following the same patients after several months of treatment and re-assessing their anxiety levels which could reveal change in anxiety level during treatment.



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