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## **Anxiety to dental procedures among adolescents in Nalgonda district, Telangana, India: A cross sectional study**

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### **Abstract**

**Introduction:** Dental anxiety in adolescents is often noticed and is a cause of postponement of appointments, delay in seeking dental care or even avoidance of seeking dental treatment resulting in a poor oral health-related quality of life. Even though dentistry has steer up with much advancement, because of this dental anxiety patients are not stepping in the initial phase of treatment eventually leading to more invasive procedures. This study was undertaken to know which dental procedure will provoke more anxiety in the adolescents.

**Materials and Methodology:** A custom-made questionnaire was prepared related to frequently done dental procedures. A total of 500 adolescents within the age group of 15-19 years were participated in the study. Filled questionnaires were collected; data was tabulated and statistically analyzed.

**Results:** In Group I (male), 76.4% of adolescents were highly anxious to extraction/ surgical procedures followed by root canal treatment (70.8%) and crown preparation with impression procedure (64.4%). In Group II (female) 89.2% of adolescents were highly anxious to extraction/ surgical procedures followed by root canal treatment (84%) and crown preparation with impression procedure (77.2%).

**Conclusion:** Adolescents were highly anxious to surgical and invasive dental procedures. Dentists should reduce their anxiety levels by behavior management techniques before treating them.

**Keywords:** Dental anxiety, Dental procedures, Adolescents

### **Introduction**

Dental anxiety determines the frequency of treatment availed and remains a barrier in maintaining oral health [1]. Despite of many innovations in dentistry i.e. with the advances in dental materials, treatment plan techniques and increased oral health awareness still there is a significant percentage of people suffer from dental anxiety [2]. The etiology of Dental anxiety depends on the age of onset; during adulthood, cause is usually a negative dental experience or due to general anxiety states. In the childhood it is multi factorial likewise due to several interacting factors, personal as well as environmental, contribute to the development of fear and anxiety in a dental care situation or Psychological factors such as shyness and general fearfulness or immaturity [3]. Adolescence refers to the period of accelerated biological growth, changes, and social role transitions that bridges the gap from childhood to adulthood [4]. Dentally anxious adolescents because of their avoidant behavior often have poorer dental health [5, 6] as they delay dental visits for a prolonged period of time, even after experiencing considerable pain thereby requiring more complex and complicated treatments. Though dental anxiety is seen in children, adolescents and adults but anxiety levels reduces as age advances [7]. Thus adults endeavor more cooperation during the procedure while children and adolescents tend to postpone them. Interestingly, this dental anxiety varies with each dental procedure. Hence in this study we would like to know which dental procedure will provoke more anxiety in adolescents and various behavior management strategies can be followed for anxious patients thereby enable the patient's ability to cope with the anticipated anxiety of dental treatment.

## Materials and Methodology

**Ethical Approval:** This study was approved by the institutional Ethical Committee, Kamineni Institute of Dental Sciences, Narketpally.

**Sample Collection:** The study population was recruited from the walk in patients of Kamineni Institute of Dental Sciences, Narketpally. A total of 500 members were selected randomly with the inclusion and exclusion criteria within a time period of six months.

### Inclusion criteria

1. Patients within the age group of 15-19 years of age
2. Willingness to participate in the survey
3. Patients with the ability to understand, read, and fill questionnaires.

### Exclusion criteria

1. Patients not willing to participate in the study.
2. Patients with physical and mental disability.

The total sample was divided into two groups based on gender i.e Group I - Male and Group II -Female with 250 members in each group. Anxiety levels were assessed with a custom-made questionnaire formulated in English and local language. The questionnaire consists of queries related to anxiousness for the frequently done dental procedures (Table 1). In the reception area during waiting period, the eligible and willing adolescents received structured questionnaire in a printed form after a brief explanation about the study and its purpose. Filled questionnaires were collected on the same day and the obtained data was tabulated and analyzed statistically.

## Results

The total sample was divided into two Groups- Group I Male and Group II- Female with 250 members in each group. In both Group I (Male) and Group II (Female), it was reported that 4.4% and 14.8% of sample population were highly anxious, 14.4% and 16.4% were moderately anxious along with 81.2% and 68.8% were reported with no anxiety to scaling and polishing procedures respectively. Relating to tooth drilling and restorative procedure it was reported that 11.2% and 33.2% were highly anxious, 17.2% and 18.8% were moderately anxious with 71.6% and 48% were not anxious to this procedures respectively. With crown preparation and impression making procedures, 64.4% and 77.2% of sample were highly anxious, 24.4% and 20.8% were moderately anxious and 11.2% and 2% were not anxious. With regard to root canal treatment procedure it was reported

that 70.8% and 84% of sample were highly anxious, 22.4% and 14.4% were moderately anxious and only 6.8% and 1.6% were not anxious to this procedure. It was concluded that 76.4% males and 89.4% females were highly anxious, 18.8% males and 10.8% females were moderately anxious and only 4.8% males were not anxious about extraction/ surgical procedure. (Table 2)

## Discussion

Dental anxiety has been cited as the fifth-most common cause of anxiety by Agras *et al.* [8]. Studies have shown that fears and phobias decline with age, which could be attributed to age dependent cerebral deterioration, factors like extinction or habituation, and adaptive resignation toward the inevitable [8, 9]. There were studies which concluded that adolescents had more anxiety towards dental procedures than adults [2, 10-12] so we have conducted this study on adolescents, as most of the dentists treat adolescents as adults during the treatment procedure which resulted in increased anxiety in them and this leads to postponement of visits or sometimes not turning up to clinic [13]. As adolescents were in a transition phase between child and adults, we should treat them in such a way that our approach should reduce their anxiety.

In our study it was evident that dental anxiety was seen among all the participants and females were highly anxious to the dental procedures compared to male group and these results are similar to other studies conducted [2, 14, 15]. This difference may be explained by women being more able to express their feelings of fear and reluctant for treatment procedure. In addition, physiological conditions such as social phobia, panic, depression, stress, and fear are more common in females, and dental anxiety may be associated with such emotions [16]. In a study conducted by Nascimento *et al.*, [17] it was found that people with previous traumatic dental experiences showed higher levels of dental anxiety and similar results were observed in our study that many of adolescents had a unpleasant dental experience resulted in increased anxiety towards dental procedures.

Present study revealed that extraction, root canal treatment, crown preparation procedures provoked more anxiety in adolescents compared to tooth drilling and scaling procedures and results were similar to other studies conducted [2, 11]. Knowing about anxious provoking treatment procedure, we can easily reduce their anxiety when the respective treatment procedure was planned. Dentists treating the adolescents should first assess their anxiety, retrain them to reduce the anxiety levels which ultimately instills positive dental attitude.

**Table 1:** Custom Made Questionnaire

S.No	Questions
<b>1</b>	<b>If you were about to have a tooth drilling and restoration, how would you feel?</b>
	a. Not anxious/mild anxious
	b. Moderate anxious
	c. Extremely anxious
<b>2</b>	<b>If you were about to have your teeth scaled and polished, how would you feel?</b>
	a. Not anxious/mild anxious
	b. Moderate anxious
	c. Extremely anxious
<b>3</b>	<b>If you were about to undergo Root canal treatment, how would you feel?</b>
	a. Not anxious/mild anxious
	b. Moderate anxious
	c. Extremely anxious

<b>4</b>	<b>If you were about to undergo crown preparation and impression taking, how would you feel?</b>
	a. Not anxious/mild anxious
	b. Moderate anxious
	c. Extremely anxious
<b>5</b>	<b>If you were about to undergo Extraction/surgical procedure, how would you feel?</b>
	a. Not anxious/mild anxious
	b. Moderate anxious
	c. Extremely anxious

**Table 2:** Anxiety Levels of Adolescents to Dental Procedures

Groups	Anxiety Levels	Extraction/Surgical Procedure	Root Canal Treatment	Crown Preparation Followed By Impression	Tooth Drilling Followed By Restoration	Scaling and Polishing
Group I (Male)	Highly Anxious	76.4%	70.8%	64.4%	11.2%	4.4%
	Moderately Anxious	18.8%	22.4%	24.4%	17.2%	14.4%
	Not Anxious	4.8%	6.8%	11.2%	71.6%	81.2%
Group II (Female)	Highly Anxious	89.2%	84%	77.2%	33.2%	14.8%
	Moderately Anxious	10.8 %	14.4%	20.8%	18.8%	16.4%
	Not Anxious	0.00%	1.6%	2%	48%	68.8%

**Conclusion**

Most of the adolescents were highly anxious to the dental procedures such as extraction/ surgical procedures followed by root canal treatment and crown preparation with impression procedure. Many of them were not anxious about tooth drilling with restorative procedure and oral prophylaxis. Hence it is important for the dentist to withdraw the dental anxiousness and emphasize the positive effects of initial phase of treatment.

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