



## DENTAL ANXIETY AMONG PEDIATRIC PATIENTS AND THEIR PARENTS

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### ABSTRACT

**Background:** Anxiety is an emotion used to describe fear over something. While undergoing a dental treatment anxiety is usually experienced by most of the patients towards pain. **Materials and Methods:** A Questionnaire based study was conducted to evaluate dental anxiety among patients anticipating various dental treatments. Two hundred paediatric patients who were scheduled for dental treatment along with their parents participated in the study. Patients were anticipating one of the following dental procedures: scaling, filling, root canal therapy, extraction. Patients were selected randomly from the out patients of Pedodontics Department. The questionnaire contained 28 questions which were divided to four sections, and the questionnaire was completed by the patients and their parents while waiting for their treatment. The data collection was done by convenience sampling. The statistical calculations were done based on the faces index using SPSS (Statistical Package for Social Sciences) software version 21.0. **Result:** A total of 200 pediatric patients and their parents participated in the study. The results of the study revealed multiple manifestations and impacts of dental anxiety, including immediate physical reactions, psychological responses and uncooperativeness in dental treatment. Scores were highest for "restoration" being 88 (44.0%), "extraction" being 81 (40.5%) followed by "conscious sedation" being 79 (39.5%) and "injections" being 70 (35.0%). Testimonials from children, and their parents suggested diverse origins of dental anxiety, namely personal experience (e.g., irregular dental visits and influence of parents), dental settings (e.g., dental chair and sounds), and dental procedures (e.g., injections, pain, discomfort). **Conclusion:** The results of the study suggested that dental anxiety in children has multifaceted manifestations, impacts, and origins. Also, anxiety was closely associated with a symptomatic, irregular attendance pattern, a history of extraction and having a dentally anxious parent. Dental anxiety could be better prevented and intercepted through coordinated efforts of dentists, dental auxiliaries, pediatric patients, and their parents.

### INTRODUCTION

Dental anxiety is defined as "an abnormal fear or dread of visiting the dentist for preventive care or therapy and unwarranted anxiety over dental procedures" and may have psychological, cognitive and behavioral consequences.<sup>[1]</sup> Moreover, anxious people tend to overestimate pain and discomfort caused by dental treatment and may also postpone or miss appointments, with negative consequences for their oral health and often having to incur more complex interventions, thereby entering a vicious cycle that tends to intensify anxiety with regard to treatment.<sup>[2]</sup>

Parents are known to subtly transmit feelings of fear and anxiety to their children. Of the two parents, mothers with high anxiety levels have most often been shown to exert a negative influence on their children's behavior. It

has been suggested that one can understand, predict, and influence a child's dental behavior through the mother's attitude toward dental care.<sup>[3]</sup>

There are varied and multiple causes of dental fear in children that can be correlated to personality, general fear, previous painful dental experiences, dental fear in parents, age, and gender.<sup>[4]</sup> This anxiety evokes physical, emotional, cognitive and behavioral responses which is mostly due to previous negative treatment, fear towards injections, drilling using rotary instruments and extraction. Beyond its impacts on dental care, dental fear and anxiety may also cause sleep disorders, affect one's daily life.<sup>[5]</sup> and have a negative impact on one's psychosocial functioning.<sup>[6]</sup> Dental fear and anxiety acquired in childhood may persist to adulthood and is a

significant predictor for avoidance of dental visits in adulthood.<sup>[7,8]</sup>

Due to this anxiety, the children avoid the dental treatment and this leads to poor oral hygiene such as decayed tooth, missing teeth, maligned teeth and poor periodontal status.<sup>[9]</sup> Specific dental procedures are associated with dental anxiety. Indeed, the child's dental anxiety may be influenced by the type of dental treatment proposed at a specific dental visit.<sup>[10]</sup> Patients who expect operative procedures and extractions exhibit higher level of anxiety.<sup>[11]</sup> Studies have reported that local anesthesia injections also increase the dental anxiety.<sup>[12]</sup> There are various factors that cause anxiety to the pediatric patients before a dental treatment. The environmental and other factors like age, siblings etc., also present as factors causing anxiety.<sup>[13]</sup>

### Need For the Study

With this background, the present study was conducted to assess the dental anxiety among pediatric patients. The objectives of the study were a) To assess the level of dental anxiety among pediatric patients; b) To assess the level of dental anxiety among parents of pediatric patients; c) To assess the level of dental anxiety among parents towards their Child's dental treatment and d) To assess the level of dental anxiety among dentists towards treating the pediatric patient.

### MATERIALS AND METHODS

A descriptive cross-sectional study was carried out at a private dental college in Chennai, Tamil Nadu. The study was conducted between the months of May to September 2019. Ethical approval for the study was obtained from the Ethics and Research Committee of the institution and informed consent was obtained from the participants. The study samples were selected randomly from patients of out-patients of Pedodontics department.

The questionnaire contained 28 questions split up into four sections, the first section of questions was for the pediatric patient regarding their anxiety towards dental procedures, the second section was for the Parents of the pediatric patients regarding their dental anxiety, the third section of the questionnaire was filled by the Parent and contained questions regarding the anxiety of their child undergoing dental treatment and the fourth section was completed by the dentist based on the behavior of the pediatric patient on the dental chair.

The questionnaire was completed by the participants. The questionnaire contained information on gender, age, previous dental visit and the reaction of pediatric patients and their parents towards various dental procedures. The FIS (Facial Image Scale) had five multiple choice items containing various smileys' dealing with the patient's subjective reaction to the dental situation.<sup>[13]</sup> This included anticipating visit to the dental clinic and anxiety towards various dental procedures such as scaling, restoration, injection and extraction. The survey also

included dentist's response towards child's cooperation during various dental procedures.

### Data Collection

The pediatric patients and their parents in the dental out-patient visiting department of Pedodontics were approached after obtaining the necessary permission from the head of the institution. The nature and purpose of the study was explained to them and written informed consent was obtained. The questionnaire was distributed by the principal investigator and to avoid any ambiguity, all the questions were explained. The respondents were requested to provide appropriate answers and were assured of the confidentiality. The filled questionnaire was collected on the same day and individuals who were not willing to participate in the study were excluded.

### Statistical Analysis

The data was analyzed using Statistical Package for Social Sciences, IBM Corporation, SPSS Inc., Chicago, IL, USA version 21.0 software package (SPSS). Descriptive statistics with frequency, percentage, mean and standard deviation was computed. Chi-square test was used to assess the level of significance at  $p < 0.05$ .

### RESULTS

#### Demographic Details

The age of the pediatric patients ranged from (2 to 14 years) and the mean age was  $(7.85 \pm 2.68)$  years and their parent's age ranged from (23 to 49 years) and the mean age was  $(34.93 \pm 5.12)$  years.

The number of female patients were 107(53.5%) and male patients were 93(46.5%). The parents accompanying children were mothers 112 (56%) and fathers 88(44%) (Table 1). The prevalence of dental anxiety for a general dental visit among the pediatric patients was found to be happy to visit a dentist for 80(40.0%); dental anxiety for their parents was found to be happy to visit a dentist for 83(41.5%) and the anxiety of the parents towards the child was found to be happy for 65(32.5%).

The prevalence of dental anxiety for screening (having the teeth looked at) among the pediatric patients was found to be happy to visit a dentist for 92(46.0%) and among their parents was found to be happy to visit a dentist for 84(42.0%) and the anxiety of the parents towards the child was found to be happy for 64(32.0%). The Dentist's view on the anxiety level of the child on the dental chair during screening was found to be not anxious for 71(35.5%).

The prevalence of dental anxiety for scaling (having the teeth scraped out) among the pediatric patients was found to be not anxious 88(44.0%) and among their parents was found to be happy for 64(42.7%) and the anxiety of the parents towards the child was found to be not anxious for 69(34.5%). The Dentist's view on the

anxiety level of the child on the dental chair during scaling was found to be happy for 72 (36.0%).

The prevalence of dental anxiety for injection among the pediatric patients was found to be not anxious for 84(42.2%) and among their parents was found to be not anxious for 107(53.5%) and the anxiety of the parents towards the child was found to be anxious for 70(35.0%). The Dentist's view on the anxiety level of the child on the dental chair during injection was found to be not anxious for 74(37.0%).

The prevalence of dental anxiety for filling among the pediatric patients was found to be not anxious for 92(36.5%) and among their parents was found to be not anxious for 103(51.5%) and the anxiety of the parents towards the child was found to be not anxious for 72(36.0%). The Dentist's view on the anxiety level of the child on the dental chair during restoration was found to be anxious for 88(44.0%).

The prevalence of dental anxiety for extraction (teeth being taken out) among the pediatric patients was found to be not anxious for 73(36.5%) and among their parents was found to be not anxious for 105(52.5%), the anxiety of the parents towards the child was found to be not anxious for 81(40.5%). The Dentist's view on the anxiety level of the child on the dental chair during extraction was found to be not anxious for 81(40.5%).

The prevalence of dental anxiety for conscious sedation (being put to sleep) among the pediatric patients was found to be not anxious for 88(44.0%) and among their parents was found to be not anxious for 107(53.5%), the anxiety of the parents towards the child was found to be not anxious for 90(45.0%). The Dentist's view on the anxiety level of the child on the dental chair during conscious sedation was found to be not anxious for 83(41.5%). (Table 2).

**Table 1: Demographic features of the study population.**

AGE	PEDO PATIENT	PARENT
Minimum	2.0	23.0
Maximum	14.0	49.0
Mean	7.855	34.930
GENDER	PEDO PATIENT	PARENT
Male	46.5%	44.0%
Female	53.5%	56.0%

**Table 2: Prevalence of Dental Anxiety among Paediatric Patients and their Parents.**

QUESTIONS	PATIENT Frequency (%)	PARENT Frequency (percentage)	PCHILD Frequency (percentage)	DENTIST Frequency (percentage)
<b>Visiting the dentist</b>				
Very happy	15(7.5)	7(3.5)	15(7.5)	NA
Happy	80(40.0)	83(41.5)	65(32.5)	NA
Not anxious	79(39.5)	82(41.0)	62(31.0)	NA
Anxious	23(11.5)	26(13.0)	51(25.5)	NA
Extremely anxious	3(1.5)	2(1.0)	7(3.5)	NA
<b>Oral screening</b>				
Very happy	6(3.0)	9(4.5)	12(6.0)	19(9.5)
Happy	92(46.0)	84(42.0)	64(32.0)	66(33.0)
Not anxious	70(35.0)	76(38.0)	59(29.5)	71(35.5)
Anxious	30(15.0)	29(14.5)	54(27.0)	36(18.0)
Extremely anxious	2(1.0)	2(1.0)	11(5.5)	8(4.0)
<b>Scaling</b>				
Very happy	7(3.5)	9(4.5)	8(4.0)	6(3.0)
Happy	64(32.0)	85(42.5)	62(31.0)	72(36.0)
Not anxious	88(44.0)	69(34.5)	69(34.5)	58(29.0)
Anxious	35(17.5)	35(17.5)	46(23.0)	53(26.5)
Extremely anxious	6(3.0)	1(0.5)	15(7.5)	11(5.5)
<b>Injection</b>				
Very happy	(0)	(0)	2(1.0)	(0)
Happy	11(5.5)	20(10.0)	22(11.0)	11(5.5)
Not anxious	84(42.0)	107(53.5)	67(33.5)	74(37.0)
Anxious	74(37.0)	60(30.0)	70(35.0)	70(35.0)
Extremely anxious	30(15.0)	13(6.5)	39(19.5)	45(22.5)
<b>Restoration</b>				
Very happy	3(1.5)	3(1.5)	6(3.0)	3(1.5)

Happy	38(19.0)	50(25.0)	39(19.5)	27(13.5)
Not anxious	92(46.0)	103(51.5)	72(36.0)	56(28.0)
Anxious	47(23.5)	35(17.5)	68(34.0)	88(44.0)
Extremely anxious	20(10.0)	9(4.5)	15(7.5)	26(13.0)
<b>Extraction</b>				
Very happy	3(1.5)	1(0.5)	(0)	1(0.5)
Happy	14(7.0)	12(6.0)	14(7.0)	7(3.5)
Not anxious	73(36.5)	105(52.5)	81(40.5)	38(19.0)
Anxious	70(35.0)	60(30.0)	71(35.5)	81(40.5)
Extremely anxious	40(20.0)	22(11.0)	34(17.0)	73(36.5)
<b>Conscious sedation</b>				
Very happy	6(3.0)	1(0.5)	(0)	4(2.0)
Happy	33(16.5)	43(21.5)	39(19.5)	10(5.0)
Not anxious	88(44.0)	107(53.5)	90(45.0)	83(41.5)
Anxious	46(23.0)	40(20.0)	55(27.5)	79(39.5)
Extremely anxious	27(13.5)	9(4.5)	16(8.0)	24(12.0)

\*Where NA is Not Applicable.

## DISCUSSION

The present study evaluates the anxiety among pediatric patients, their parents and the dentists using FIS – FACES IMAGE SCALE. The anxiety among the pediatric patients not only made them uncomfortable and unlikely to undergo the treatment, it also made them anxious.<sup>[13]</sup> The results envision the anxiety level of the patients, the parent, parent's opinion of their child getting treated and the dentist. Visiting the dentist caused happiness among the patient or parent as it was just a visit and it was made a pleasant experience by providing them with a colorful environment, presence of other children with whom they can play with etc.

Following the dental visit the patient and the parent seem happy still to undergo a dental checkup which is a good thing to know the status of the oral cavity for the patient and an amusement on looking at the dental environment for the pediatric patient. While the dentist still feels that the pediatric patient is not anxious on undergoing a dental checkup as the dentist explains the procedure.

On coming to the actual dental procedures, like scaling, restoration, extraction the patient as well as the parents are not that anxious in getting the treatment done. Another study also confirmed that the scales reported by children and those evaluated by parents were very similar and highly correlated. Previous studies showed that adolescents with high dental anxiety had a significantly higher DMFT score than their contemporaries with low dental anxiety.<sup>[14]</sup> This finding has been substantiated for younger children, as dentally anxious 5-year-olds were found to have had significantly more caries than non-dentally anxious children.<sup>[15]</sup>

But the dentist considers that the patient undergoing restoration and extraction still be anxious as it is a time-consuming procedure which makes them more restless. An injection during the treatment for the pediatric patient brings anxiousness to the parent as it is a painful

procedure and the fear that 'if their child will be anxious?' 'Makes the parent anxious.

Another study revealed that the use of Virtual Reality (VR) as a distraction was effective in decreasing pain perception and state anxiety level in children without anxiety disorders during routine dental treatment. In same line, review of the literature revealed a decrease in the stress levels in the majority of studies using VR distraction as pain perception has a large psychological component and that pain attracts a strong attentive response because of the potential threat of damaged tissue associated with the sensation.<sup>[15]</sup>

Conscious sedation is used to eliminate anxiousness, pain, discomfort of the patient for a dental procedure which is of long duration. Here as there is not much anxiety, it is considered as a preventive method to eliminate the anxiety. Although the dentist reports that the patient is neither happy nor anxious regarding the conscious sedation.

This study suggests that even though the patient and the parent consider themselves to be not anxious regarding the dental procedures, the dentist feels that the patients are significantly anxious on undergoing the dental treatment.

## CONCLUSION

This study suggests that dental anxiety in children has multifaceted manifestations, impacts, and origins. Strategies for the assessment, prevention and control of dental anxiety should be implemented to allow better treatment for children, and their parents. The profound impacts of dental anxiety on children reinforce the idea that managing dental anxiety should be a starting point in patient management. In light of its diverse origins, dental anxiety could be better prevented and intercepted through coordinated efforts of dentists, dental auxiliaries, pediatric patients, and their parents. Thoughtful approaches before, during, and after the dental visit

contribute in one way or another to a pleasant and productive dental experience. Successful dental anxiety management not only paves the road to satisfactory clinical outcome and better oral health, but also builds confidence in pediatric patients and may help them regulate their emotions while facing other challenges in life. An adequate approach regarding children with dental anxiety can assist in establishing a good dental experience and a trusting relationship between pediatric dentists, patients and parents.

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