

**Comparative Evaluation of Dental anxiety levels among Children and their Parents before and after Dental Treatment-A Cross-sectional Study**

<sup>1</sup>Dr. Reshma Joseph, Final year postgraduate student, Department of Pediatric and Preventive Dentistry, Azeezia college of Dental Sciences and Research, Kollam, Kerala, India.

<sup>2</sup>Dr. Jyoti Sumi Issac, Professor and Head, Department of Pediatric and Preventive Dentistry, Azeezia college of Dental Sciences and Research, Kollam, Kerala, India.

<sup>3</sup>Dr. Parvathy Girija, Associate Professor, Department of Pediatric and Preventive Dentistry, Azeezia college of Dental Sciences and Research, Kollam, Kerala, India.

<sup>4</sup>Dr. Arjun DS, Senior Lecturer, Department of Pediatric and Preventive Dentistry, Azeezia college of Dental Sciences and Research, Kollam, Kerala, India.

**Corresponding Author:** Dr. Reshma Joseph, Final year postgraduate student, Department of Pediatric and Preventive Dentistry, Azeezia college of Dental Sciences and Research, Kollam, Kerala, India.

**Citation of this Article:** Dr. Reshma Joseph, Dr. Jyoti Sumi Issac, Dr. Parvathy Girija, Dr. Arjun DS, “Comparative Evaluation of Dental anxiety levels among Children and their Parents before and after Dental Treatment-A Cross-sectional Study”, IJDSIR- January - 2022, Vol. – 5, Issue - 1, P. No. 430 – 435.

**Copyright:** © 2022, Dr. Reshma Joseph, et al. This is an open access journal and article distributed under the terms of the creative commons attribution noncommercial License. Which allows others to remix, tweak, and build upon the work non commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**Type of Publication:** Original Research Article

**Conflicts of Interest:** Nil

**Abstract**

**Aim:** The purpose of this study was to evaluate and compare the anxiety levels of children and their parents before and after dental treatment using Children's Fear Survey Schedule - Dental Subscale (CFSS-DS) and Modified Dental Anxiety Scale (MDAS) respectively.

**Materials and Methods:** The study was carried out on 47 children aged between 5-13 years and their parents, who reported to our department. The techniques used in this study were Tell-Show-Do (TDS) and communication.

**Results:** The result of this study showed that there was a gradual decrease in dental anxiety in children in their

subsequent visits. There was a positive correlation between parental and child's anxiety. Girls were found to be more anxious when compared to boys and as age increases, the dental anxiety of the patient decreases.

**Conclusion:** A friendly, sensitive, sympathetic and impressive communication skills during the initial phase of treatment can reduce the child's anxiety along with Tell-Show-Do method.

**Summary**

Dental fear has been reported as one of the most important reasons for avoidance and negligence of regular dental care. It is of great importance that the dental health professional is able to identify children

who have dental fear and apply appropriate pediatric management techniques at the earliest age possible. The purpose of this study was to evaluate and compare the anxiety levels of children and their parents before and after dental treatment using Children's Fear Survey Schedule - Dental Subscale (CFSS-DS) and Modified Dental Anxiety Scale (MDAS) respectively. The techniques used in this study were Tell-Show-Do (TDS) and communication. The result of this study showed that there was a gradual decrease in dental anxiety in children in their subsequent visits. There was a positive correlation between parental and child's anxiety. Girls were found to be more anxious when compared to boys and as age increases, the dental anxiety of the patient decreases.

**Keywords:** Dental anxiety; Dental anxiety scale; Children; Tell-Show-Do; Communication

### **Introduction**

Dental anxiety is defined as “an abnormal fear or dread of visiting the dentist for preventive care or therapy and unwanted anxiety over dental procedures” and may have psychological, cognitive and behavioural consequences. This can prevent patients from cooperating fully during dental treatment<sup>[1]</sup> and also causes strain to the dentist undertaking dental treatment. Hence it can be challenging for the dental practitioner to treat young children as their level of cooperation can be restricted because of their anxiety.<sup>[2]</sup>

Dental fear has been reported as one of the most important reasons for avoidance and negligence of regular dental care. It is of great importance that the dental health professional is able to identify children who have dental fear and apply appropriate pediatric management techniques at the earliest age possible.<sup>[3]</sup>

The purpose of this study was to evaluate and compare the anxiety levels of children and their parents before

and after dental treatment using Children's Fear Survey Schedule - Dental Subscale (CFSS-DS) and Modified Dental Anxiety Scale (MDAS) respectively

### **Materials and methods**

The study was carried out on 47 children aged between 5-13 years and their parents, who reported to the Out Patient Department of Pedodontics and Preventive Dentistry at Azeezia College of Dental Sciences and Research, Kollam, Kerala, South India.

### **Inclusion criteria**

- Children in the age group between 5-13 years and their parents.
- Children without any systemic disease.
- Children who visited the dental clinic for the first time
- Children and their parents who were willing to participate in the study.
- Children visiting the clinic with their parent.

### **Exclusion criteria**

- Children and their parents, not willing to participate in the study.
- Incompletely filled questionnaires by children or parents.

### **Methodology**

The purpose of this study was to evaluate the child's anxiety associated with the dental treatment on first and second visit and level of dental anxiety of parents who accompanied them. The child's anxiety score was evaluated using Children's Fear Survey Schedule - Dental Subscale (CFSS-DS) and parental anxiety was evaluated using Modified Dental Anxiety Scale (MDAS). The CFSS-DS consisted of 15 items, each score from 1 to 5. Total score ranges from 15 to 75, and scores of 38 and above indicated presence of dental fear. The Modified Dental Anxiety Scale (MDAS), is a modification of the Corah Dental Anxiety Scale

(CDAS), accomplished by adding a fifth item that relates to fear of injection.<sup>[4]</sup>

The MDAS consisted of 5 items, each score from 1 to 5. Total score ranges from 5 to 25, and scores of 19 and above indicates presence of dental fear. It has been shown to be more comprehensive, valid and highly reliable than other anxiety questionnaires, and simple to complete. Both the questionnaires were translated to the patient's local language. Child's anxiety status was assessed on first visit using CFSS-DS, simultaneously parents anxiety status was assessed using MDAS on first visit itself. Tell-show-do (TSD) and Communication were the behaviour management techniques used in this study.

The child was explained what was going to be done in words he/she could understand. Then the procedures were demonstrated exactly how it was going to be conducted. Finally the procedure was performed precisely according to the demonstration. Also, communicating with the child was found to be an effective way to eliminate dental anxiety.

There are two ways of establishing communication: Verbal: Spoken language to gain confidence, Nonverbal: Expression without words, like, welcome handshake, patting, and establishing eye contact. The important aspect of communication is getting the child to respond to dentist's commands. This technique is quite successful in managing the anxious paediatric dental patients.

### Analysis of data

The data collected was entered in to the personal computer and analyzed using SPSS version 21.0. Inferential and Descriptive statistics were applied wherever required. The results were expressed in mean and standard deviation. Paired-t test was used to test the difference between means of two groups. Pearson

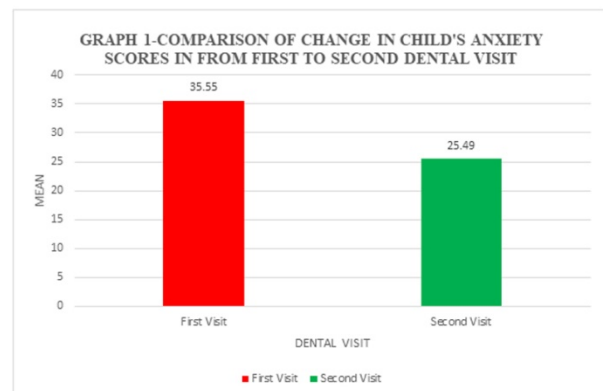
correlation coefficient was used to assess the relationship between the child's anxiety levels to all other variable parameters. The difference in anxiety scores between boys and girls were analyzed using one way ANOVA.

### Results

A total of 47 children (22 males and 25 females) between the age group of 5-13 years along with their parents who fulfilled the inclusion criteria were included in the study. The mean anxiety score of children in first visit was (38.55 ±11.053) and in second visit was (25.49±7.650). It was found that this reduction in the mean anxiety scores from first to second visit is statistically significant (p value= 0.000) (Table1) (Graph 1)

Table 1: Comparison of Change In Child's Anxiety Scores From First To Second Dental Visit

Anxiety score	N	Mean	SD
Anxiety score at 1 <sup>st</sup> visit	47	38.55	11.053
Anxiety score at 2 <sup>nd</sup> visit	47	25.49	7.650
p-Value=0.000*			
* Statistically significant at p<0.05			



A significant difference is seen between Child's anxiety and parent's anxiety during the first visit (p-value 0.000) (Table -2)

Table 2: Comparison of Child's Anxiety Score and Parent's Anxiety Score At First Dental Visit

Anxiety score	N	Mean	SD
Anxiety score of child at 1 <sup>st</sup> visit	47	38.55	11.053
Anxiety score of parents at 1 <sup>st</sup> visit	47	12.94	4.410
p-Value=0.000*			
* Statistically significant at p<0.05			

Also there is a negative low correlation between Child's age and Child's anxiety at first visit ie. As age increases anxiety decreases (Table-3)

Table 3: Correlation between Child's Anxiety and Other Variables

Correlation between	Pearsons correlation coefficient	P-value	Significance
Child's age and child's anxiety at 1 <sup>st</sup> visit	-0.3222	0.0270.027	Not Significant
Parent's age and child's anxiety at 1 <sup>st</sup> visit	-0.185	0.213	Not significant
Child's age and parent's anxiety at 1 <sup>st</sup> visit	-0.239	0.106	Not significant
Parent's age and parent's anxiety at 1 <sup>st</sup> visit	-0.136	0.360	Not significant

This study shows a significant difference between the anxiety scores of boys and girls. Girls were found to be more anxious when compared to boys in the first visit (Table -4)

Table 4: Comparison of Anxiety Scores between Boys and Girls

Gender of Child	N	Mean	SD
Male	22	35.09	9.979
Female	25	41.60	11.244
p-Value=0.000*			
* Statistically significant at p<0.05			

**Discussion**

Dental anxiety is a common problem that affects people of all ages and appears to develop mostly in childhood and adolescence. Childhood dental anxiety is not only distressing for the child and family but is also associated with poor oral health outcomes and an increased reliance on expensive specialist dental services. Thus, the frequency of dental diseases and unpleasant dental experience is greater among children with more anxious and uncooperative behaviour in comparison to non-anxious children.<sup>[1]</sup>

Neglect of dental care due to fear may lead to severity of dental diseases and pain. The aetiology of dental fear in children depends on several factors and has been related to personality, general fear, parental dental fear, age, gender and previous dental experiences. The first dental experience is important in moulding child's attitude toward dentistry and dental outcome. It is essential to identify anxious children at the earliest age possible in order to institute a precocious behavioural treatment.<sup>[5]</sup>

The behaviour management techniques used in this study were Tell-Show-Do (TDS) and communication. Tell-show-do method is one of the most commonly taught behaviour management techniques, based on the principle of social learning theory. It dictates that before

any procedure is done, the child is to be well informed and a demonstration should be given using a simulator exactly what will happen before the procedure is started.<sup>[5]</sup>

First objective in the successful management of young child is to establish communication. By involving the child in conversation, the dentist not only learns about the patient but also may relax the youngster and establish rapport and trust.

The present study assessed the dental anxiety level of children and their parents during two different visits to the Out Patient Department, Pedodontics and Preventive Dentistry, Azeezia College of Dental Sciences and Research, Kollam, India. The Fear Survey Schedule - Dental Subscale (CFSS-DS) and Modified Dental Anxiety Scale (MDAS) respectively, were used.

Dental anxiety has a multifactorial origin, and among the environmental factors, parental dental fear is said to be strongly correlated to that of the child. Markus et al in a meta-analysis demonstrated a significant relationship between parental and child dental anxiety<sup>[6]</sup>. Parental anxiety plays a vital role in establishment of child's dental anxiety. If parent's anxiety increases, their child's anxiety also increases. This result is in accordance with the study done by Majstorovic M<sup>[7]</sup> et al. In the present study it has been found that there was a significant difference between Child's anxiety and parent's anxiety in the first visit (p-value 0.000).

On comparing the mean anxiety scores of children in First (mean-38.55) to Second visit (mean-25.49), it was found that there was a decrease in the mean anxiety scores during the second visit, which is statistically significant (p-value 0.000). Similar results were seen in the study conducted by Raghavendra<sup>[3]</sup> et al.

In this study, there was a significant difference (p-value 0.043) in anxiety scores between boys (mean 35.09) and

girls (mean 41.60) and girls scored higher when compared to boys. This result is in accordance with studies conducted by Ten Berge<sup>8</sup> et al.

It has been also found that dental anxiety decreases with increasing age. This result is similar to the studies done by Majstorovic M<sup>[7]</sup> et al.

In this study Children were most afraid of "injections", "Dentist drilling" and "Have somebody put instruments in your mouth" which is similar to findings from other studies<sup>[8,9]</sup>. This study was an attempt to evaluate the correlation between child's and parent's anxiety at different visits, and applying simple behavior management techniques on the child to reduce their dental anxiety before proceeding to further dental treatment. Since there was significant decrease in the mean anxiety scores from first to second dental visit assessed using CFSS-DS, this conventional technique has proven to lower the levels of anxiety in children towards dental treatment or dental settings when applied in the proper manner. Friendly, sensitive, sympathetic and impressive communication skills during the initial phase of treatment can reduce the child's anxiety

### Conclusion

The result of the present study shows that

1. There is a gradual decrease in dental anxiety in children in their subsequent visits.
2. There is a positive correlation between parental and child's anxiety
3. Girls were found to be more anxious when compared to boys
4. As the age increases, the dental anxiety of the patient decreases

### Abbreviations

CDAS- Corah Dental Anxiety Scale

CFSS-DS -Children's Fear Survey Schedule - Dental Subscale

MDAS- Modified Dental Anxiety Scale

TDS- Tell-Show-Do

## References

1. Assunção CM, Losso EM, Andreatini R, et al. The relationship between dental anxiety in children, adolescents and their parents at dental environment. *J Indian Soc Pedod Prev Dent*. Vol. 31, no. 3, 2013, p. 175–179
2. Shruti Girish Virupaxi, A comparative study of Filmed Modelling and Tell-Show-Do technique on anxiety in children undergoing dental treatment; *Indian J Dent Adv*. Vol. 8, no. 4, 2016, p. 215-221.
3. Havale R, Dhanu. G, A. Awaiz, Shrutha S.P, T. Namratha, Shafna T.P, Q. Nafiya. Dental anxiety levels among children and their parents before and after video modelling health education technique; *International Journal of Scientific Research*, Vol. 7, no. 10, 2018, p. 58-60.
4. Howard, K. E., & Freeman, R. Reliability and validity of a faces version of the Modified Child Dental Anxiety Scale. *Int J Paediatr Dent*, Vol. 17, no. 4, 2007, p. 281-288.
5. Khandelwal D, Kalra N, Tyagi R, et al. Control of anxiety in pediatric patients using “Tell show do” method and Audiovisual distraction. *J Contemp Dent Pract*, Vol. 19, no. 9, 2018, p. Vol. 17, no. 4, 2007, p. 281-288.
6. Themessl-Huber M, Freeman R, Humphris G, MacGillivray S, Trezi N, Empirical evidence of the relationship between parental and child dental fear: a structure review and meta-analysis. *Int J Paediatr Dent*, vol. 20, 2010, p. 83-101
7. Majstorovic M, Veerkamp JS, Skrinjaric I. Reliability and validity of measures used in assessing dental anxiety in 5- to 15-year-old Croatian children, *Eur J Paediatr Dent*, vol. 4, no. 4, 2003, p. 197-202.
8. Ten Berge M, Veerkamp JS, Hoogstraten J, Prins PJ. Childhood dental fear in the Netherlands: prevalence and normative data, *Community Dent Oral Epidemiol*, vol. 30, no. 2, 2002, p. 101-7
9. Yamada MK, Tanabe Y, Sano T, Noda T, Cooperation during dental treatment: the Children's Fear Survey Schedule in Japanese children, *Int J Paediatr Dent*, vol. 12 no. 6, 2002, p. 404-9.
10. H Abbasi ,M Saqib et al, The Efficacy of Little Lovely Dentist, Dental Song, and Tell-Show-Do Techniques Alleviating Dental Anxiety in Paediatric Patients: A Clinical Trial; *Biomed Research International*, 2021, article 1119710, 7 pages
11. Dr.Margaret Moore, Enhancing pediatric care with the tell-show-do communication method. *J of Dent Edu*, vol. 65, no. 12, 2001; p. 1369-77.
12. Carson P, Freeman R. Tell-show-do: reducing anticipatory anxiety in emergency paediatric dental patients, *Int J Health Prom Educ*, vol. 36, 1998, p. 87– 90.