



ISSN Print: 2394-7489  
ISSN Online: 2394-7497  
IJADS 2020; 6(4): 104-109  
© 2020 IJADS  
[www.oraljournal.com](http://www.oraljournal.com)  
Received: 19-08-2020  
Accepted: 20-09-2020

**Dr. Saumya Paul**  
Department of Pedodontics,  
Sudha Rustagi College of Dental  
Sciences and Research,  
Faridabad, Haryana, India

**Dr. Megha Chawla**  
Department of Pedodontics,  
Sudha Rustagi College of Dental  
Sciences and Research,  
Faridabad, Haryana, India

**Dr. Ekta**  
Department of Pedodontics,  
Sudha Rustagi College of Dental  
Sciences and Research,  
Faridabad, Haryana, India

**Dr. Bhavna Gupta Saraf**  
Department of Pedodontics,  
Sudha Rustagi College of Dental  
Sciences and Research,  
Faridabad, Haryana, India

**Dr. Neha Sheoran**  
Department of Pedodontics,  
Sudha Rustagi College of Dental  
Sciences and Research,  
Faridabad, Haryana, India

**Corresponding Author:**  
**Dr. Saumya Paul**  
Department of Pedodontics,  
Sudha Rustagi College of Dental  
Sciences and Research,  
Faridabad, Haryana, India

## Heebie Jeebies among children and parents towards dentistry

**Dr. Saumya Paul, Dr. Megha Chawla, Dr. Ekta, Dr. Bhavna Gupta Saraf and Dr. Neha Sheoran**

DOI: <https://doi.org/10.22271/oral.2020.v6.i4b.1054>

### Abstract

The aim of this study was to assess the anxiety in children which would help the pedodontist to modify the child's behavior and deliver the treatment effectively and efficiently. The present study consisted of 100 subjects which included 50 school going children (6- 12 year) of age and their parents accompanying them to the dentist. A Facial Scale was used to assess children's anxiety levels, while Corah's Dental Anxiety Scale (DAS) was used to assess Parents anxiety level. Results of this study shows that 27% children show high anxiety level, 50% children have light anxiety level and 23% children show intermediate anxiety level with different dental instruments and equipment. The study concluded that assessment of parents fear prior to child's dental treatment may help the clinician in modifying behavior management strategies also whenever parental anxiety is high, efforts to reduce the parents' level of anxiety may also benefit the child.

**Aim:** Assessment of anxiety in children which would help the pedodontist to modify the child's behavior and deliver the treatment effectively and efficiently.

**Objectives:** To correlate the dental anxiety level of children and their parents.

To evaluate the dental instruments which elicits the maximum anxiety in children.

**Keywords:** Anxiety, children, facial scale, behaviour management

### Introduction

Fear is an individual's response to a life threatening event or dangerous situation to protect himself or herself [1]. Fear and/or anxiety are recurring feelings and a cause of concern in paediatric dental treatment, since emotions influence children's behaviour and play an important role in pain perception [2]. Dental anxiety can be defined as a feeling of apprehension about dental treatment, which is not necessarily connected to a specific external stimulus. It may lead to avoidance of dental care, increasing the risk of caries development and oral diseases [3].

Factors related to dental anxiety includes age, gender, parental anxiety, etc. Painful or negative dental experience is the most common causes of dental anxiety [4]. The onset of anxiety is thought to originate in childhood, and the effect of this fear persists into adulthood [5]. As a result, anxious individuals postpone dental treatment, are quite uncooperative during dental visits and develop lower pain threshold [6].

Girls and younger children are most often reported as more fearful than boys and older children [7].

Parents play an important role in teaching their children to deal with fearful situations [8]. As early as the 1990s, citing the increased parental participation in dental treatment, it was recognized that the traditional approach of keeping the parent out of the operatory may not be feasible or effective in all cases [9].

The influence of parental anxiety on children's behavior is well recognized by dentists in clinical situations. 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 [10].

Many measurement techniques have been proposed to assess dental fear and anxiety and DBMPs; behavioral ratings, psychometric scales, physiological measures, and projective techniques [10].

Therefore, careful assessment of child's anxiety is an important step for proper patient management and delivery of good quality of dental care. Also, assessment of the caregiver's anxiety might be very helpful to form an understanding of the basis of the child's anxiety. Therefore parents can play an important role in their children's dental treatment and behaviour during visits to the dentist [11].

Aim of the study was to assess anxiety in children which would help the pedodontist to modify the child's behavior and deliver the treatment effectively and efficiently.

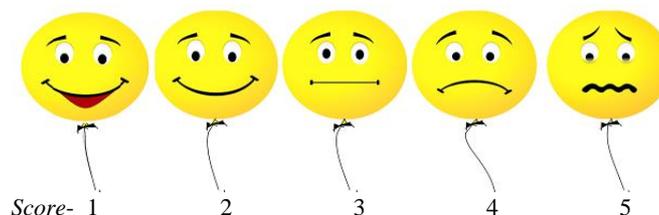
### Materials and Methods

The present study was conducted in the Department of Pedodontics and Preventive Dentistry, Sudha Rustagi Dental College of Science and Research Faridabad. Study population consist of 100 subjects which is comprised of 50 school going children (6- 12 year) of age and their parents accompanying them to the dentist, was selected for the study.

### Sample Selection

The sample size consisted of 50 healthy children and their parents who were willing to participate in the study. Children and their parents were informed about the study design explaining the contents of the study also children and their parents suffering from any systemic disease, or handicapping conditions were excluded from the study. A Facial Scale was used to assess children's anxiety levels, while Corah's Dental Anxiety Scale (DAS) was used to assess Parents anxiety level [12].

The facial scale validated in Brazil by Buchanan & Niven [2002] will be used for assessing the children's level of anxiety [13]. In random order ten photographs of instruments/equipment used in dental pediatrics routine (Dentistry chair; Mouth mirror; Dental explorer; Clinical tweezers; X-ray machine; Rubber dam clamp; Rubber dam; Pediatric forceps; High speed handpiece; Carpule syringe). The child was asked to choose one item on the facial scale (1 to 5 with faces varying from very sad to very happy). Images 1 and 2 will be considered light anxiety, image 3 will be considered intermediate, and 4 and 5 will be intense.



Parent's anxiety levels was assessed by using the Dental Anxiety Scale (DAS) proposed by Corah. Corah's DAS is a well known psychometric scale that was developed in 1969. It is simple, easy to use, has high reliability and predictive validity [14]. Dental concern assessment scale was developed by J. H. Clarke and S. Rustvold in 1993. It comprised of four multiple choice questions, each having 5 options, which were scored as A = 1, B = 2, C = 3, D = 4, E = 5; with (A) being a level of no anxiety and (E) representing the maximum level of anxiety. The total score for the Norman Corah scale ranges from 4 to 20 and anxiety ratings are classified as: 4 to 8 = no anxiety, 9 to 12 = moderate anxiety, 13 to 14 =high anxiety, 15 to 20 = severe anxiety [15].

<b>Norman Corah's Dental Questionnaire</b>	
1.	<b>If you had to go to the dentist tomorrow for a check-up, how would you feel about it?</b>
a.	I would look forward to it as a reasonably enjoyable experience.
b.	I wouldn't care one way or the other.
c.	I would be a little uneasy about it.
d.	I would be afraid that it would be unpleasant and painful.
e.	I would be very frightened of what the dentist would do.
2.	<b>When you are waiting in the dentist's office for your turn in the chair, how do you feel?</b>
a.	Relaxed.
b.	A little uneasy.
c.	Tense.
d.	Anxious.
e.	So anxious that I sometimes break out in a sweat or almost feel physically sick.
3.	<b>When you are in the dentist's chair waiting while the dentist gets the drill ready to begin working on your teeth, how do you feel?</b>
a.	Relaxed.
b.	A little uneasy.
c.	Tense.
d.	Anxious.
e.	So anxious that I sometimes break out in a sweat or almost feel physically sick.
4.	<b>Imagine you are in the dentist's chair to have your teeth cleaned. While you are waiting and the dentist or hygienist is getting out the instruments which will be used to scrape your teeth around the gums, how do you feel?</b>
a.	Relaxed.
b.	A little uneasy.
c.	Tense.
d.	Anxious.
e.	So anxious that I sometimes break out in a sweat or almost feel physically sick.

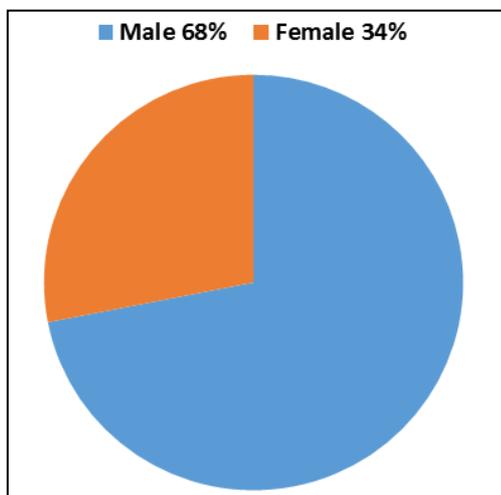
**Statistical Analysis**

- The data was analyzed using SPSS software 17.0. Data will be evaluated by using Friedman test to check any differences in children’s anxiety levels relative to the equipment/instruments
- To found correlation between parents anxiety levels and their children’s the Spearman test was applied between the average anxiety levels found for parents and the

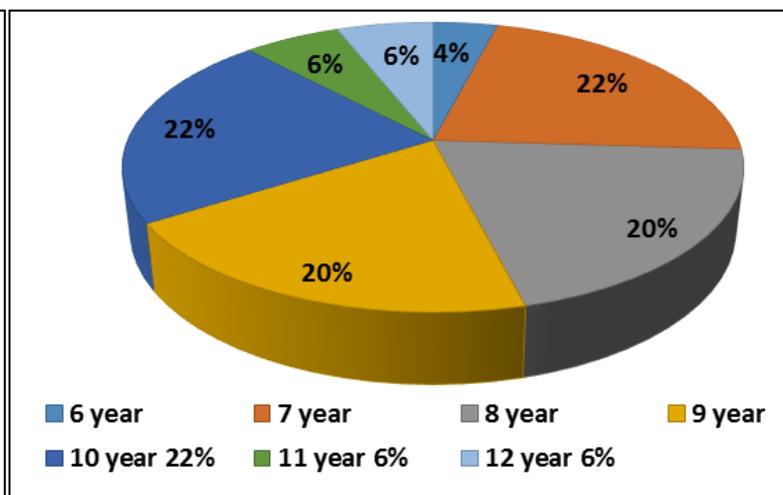
average anxiety levels found for children.

**Results**

A total of 50 children aged 6 to 12 year was evaluated, of which 34 (68%) was male and 16 (34%) was female (figure1). In which 10 year and 7 year children population are more as compared to other age group children (figure 2).



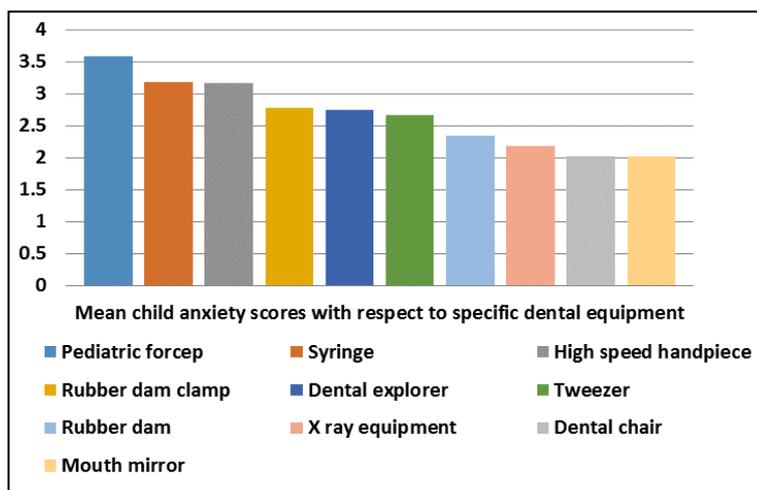
**Fig 1:** Children population



**Fig 2:** Children, s Age Group

Figure 3 shows: Frequency distribution of children with respect to their anxiety to words specific dental equipment which show intense anxiety level regarding specific instrument in descending order: pediatic forcep> carpule syringe> High speed handpiece> Rubber dam clamp> Dental explorer> Tweezer> Rubber dam>X-ray equipment>Dental

chair> Mouth mirror. The study found a statistically significant difference between the instruments/equipment and the level of anxiety these caused on the ( $p<0.001$ ). And the children’s anxiety levels was found: 50% light, 23% intermediate, and 27% intense (figure 5)



**Fig 3:** Show Descriptives of Mean child anxiety scores with respect to specific dental equipment

**Table 1:** Frequency distribution of children with respect to their anxiety towards specific dental equipment

Instrument/ Equipment / Equip	Average Anxiety Score	Standard Deviation	Children, S Anxiety Level (%)		
			Mild	Moderate	Intense
Pediatic forcep	3.58	1.36	24.0	22.0	54.0
Syringe	3.18	1.19	34.0	18.0	48.0
Highspeedhandpiece	3.16	1.25	38.0	18.0	44.0
Tweezer	2.66	1.13	56.0	12.0	32.0
Rubber dam clamp	2.78	1.22	42.0	28.0	30.0
Dental explorer	2.74	1.26	40.0	38.0	22.0
Rubber dam	2.34	1.31	68.0	12.0	20.0
X-ray equipment	2.18	0.93	60.0	28.0	12.0
Mouth mirror	1.90	1.30	72.0	26.0	2.0
Dental chair	2.02	0.82	70.0	28.0	2.0

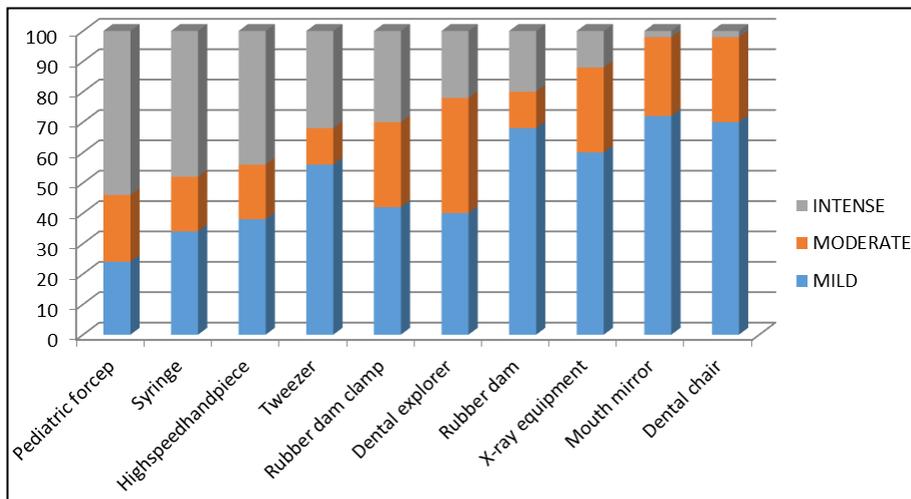


Fig 4: Children anxiety level with dental equipment

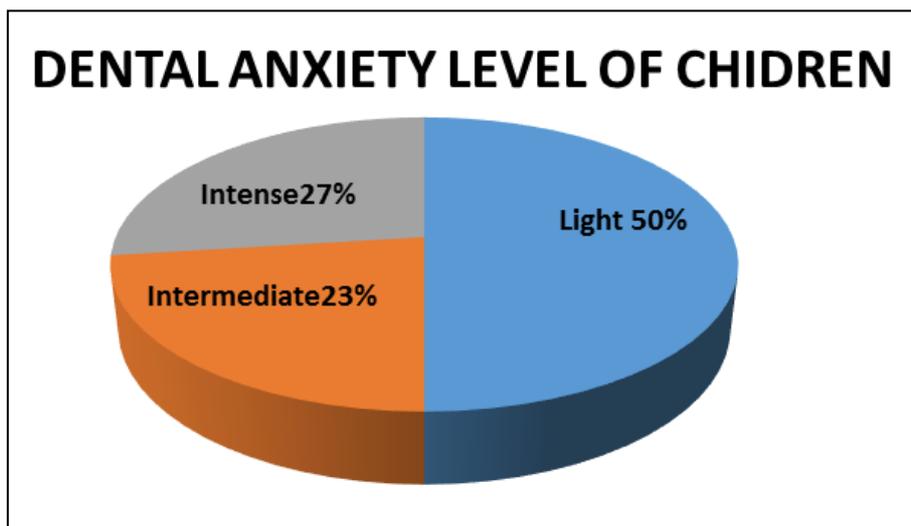


Fig 5: Shows Childrens Anxiety Level

In Table 2 describe parents anxiety level by in which the parents' anxiety levels, 32% was found to be null, 38% was low, 30% was moderate, and 0% was exacerbated.(figure 5)

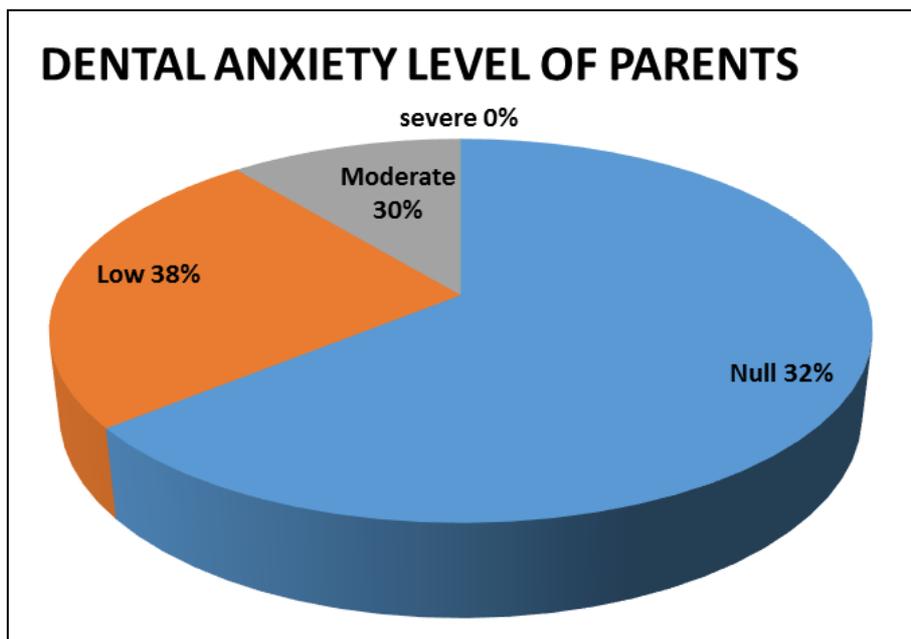
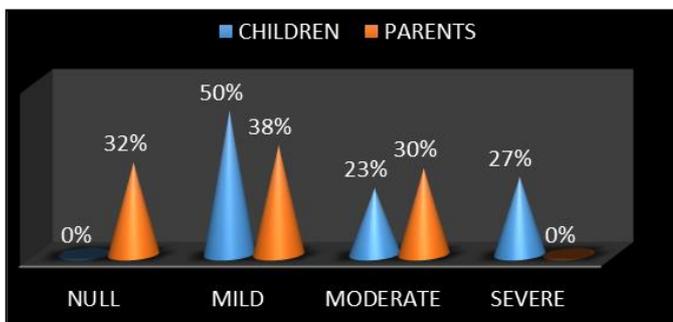


Fig 6: Parents Anxiety Level



**Fig 7:** Correlation of dental anxiety level

- Results of this study shows that 27% children show high anxiety level, 50% children have light anxiety level and

23% children show intermediate anxiety level with different dental instruments and equipment.

- In this study 32% parents anxiety level was null, 38% was low, 30% was moderate, and 0% parents was exacerbated anxiety level with dental procedure.

Spearman's rho	P value
-0.019	0.895, NS

The children's average anxiety level was 2.64, whereas the average for the parents was 9.92. No significant correlation was found ( $rs = -0.019$ ,  $p = 0.895$ ) between the parents' anxiety level and that of their children, which indicates that the children's anxiety levels were not dependent on their parents' or caretakers' anxiety levels

**Table 2:** Two-by-two analysis, using the Wilcoxon test, of the instruments/equipment and their respective p values.

	Pediatric forcep	D explorer	Xrayequipment	RD	HSHandpiece	RDclamp	MM	tweezer	Dentalchair
Syringe	0.089	0.079	<0.0001, S	0.004, S	0.951	0.103	<0.001, S	0.089	<0.0001, S
Pediatricforcep		<0.0001, S	<0.0001, S	<0.0001, S	0.124	0.001, S	<0.0001, S	<0.0001, S	<0.0001, S
Dental explorer			0.044	0.091	0.103	0.748	0.001, S	0.749	0.001, S
X rayequipment				0.414	<0.0001, S	0.036	0.107	0.091	0.391
Rubber dam					<0.0001, S	0.195	0.020	0.258	0.074
High speed handpiece						0.065	<0.0001, S	0.059	<0.0001, S
Rubber dam clamp							<0.0001, S	0.793	0.001, S
Mouth mirror								<0.0001, S	0.430
Tweezer									0.002, S

**Discussion**

Despite the technological advances in dentistry, dental anxiety and the fear of pain remains globally widespread and is considered a major barrier to dental treatment [16]. The various problems arising due to this are: dental avoidance, which worsens oral health and quality of life, and dental phobia, which may affect dentist – patient relationship further leading to a compromised dental treatment [11].

Managing children suffering from dental anxiety is challenging for the dental professionals. Therefore, the purpose of this study was to assessed the correlation between the dental anxiety level in school going children and their parents visiting the department for dental treatment. In this study 50 school going children (6 to 12 year) and their parents was selected to assessed the anxiety level relative to instruments/equipment used in dental pediatric routine. A Facial Scale was used to assessed children's anxiety levels, while Corah's Dental Anxiety Scale (DAS) was used to assessed Parents anxiety level.

Results of this study shows that 27% children show high anxiety level, 50% children have light anxiety level and 23% children show intermediate anxiety level with different dental instruments and equipment. The pediatric forcep caused the highest anxiety levels, probably due to this instrument being associated with the application of extraction of teeth, which is identified as the most painful moment in the treatment. This suggests that apparently invasive procedures cause greater anxiety in children and the appearance of instruments can suggest an invasive. In this context, in addition to the pediatric forcep, the instruments that caused the highest anxiety levels were the carpule syringe, the High speed handpiece and the rubber dam clamp.

In this study 32% parents anxiety level was null, 38% was low, 30% was moderate, and 0 % parents was exacerbated anxiety level with dental procedure. Some studies suggest a correlation between parents' anxiety levels and those of their children Huber *et al.*, 2010; Boman *et al.*, 2008; Lee *et al.*,

2008; Lara *et al.*, 2012]. On the other hand, other studies report that compared to other factors, parents' fear and anxiety do not have significant effects on children's anxiety and fear [Klaassen *et al.*, 2003] [17]. But no significant correlation was found in this study between child and their parents anxiety level. It showed that that the children's anxiety levels were not dependent on their parents' or caretakers' anxiety levels. Therefore it is necessary to focus on a patient entering any dental clinic with anxiety during treatment procedure. The information obtained from this study can be quite helpful for the dentists to accordingly modify the behavior management techniques and the manner in which the dental procedure would be effectively delivered to instill a positive attitude in children, which would help in making them better and healthy individuals for the future

**Conclusion**

Parents' perception of dental appointments being unpleasant may be passed onto children. An assessment of parents fear prior to child's dental treatment may help the clinician in modifying behavior management strategies. Whenever parental anxiety is high, efforts to reduce the parents' level of anxiety may also benefit the child. Providing parents with information about their child's dental treatment has been found to be an effective intervention in reducing the pre-operative anxiety of the parents.

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