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### EVALUATION OF CHILDREN'S PERCEPTION TOWARDS BEHAVIOR MANAGEMENT TECHNIQUE FOR DENTAL TREATMENT

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#### **ABSTRACT:**

To evaluate children's perception towards behavioural guidance techniques. Compare the children's perception of the various behavioural management techniques. 100 paediatric patient between 6-10 years of age, undergraduate clinics 1-6 Saveetha dental college and hospitals. Behavioural management technique videos for 8 methods were prepared and shown to the children. This was followed by an interview. Children do have a very strong opinion regarding the behavioural management techniques used during their dental treatment. Greater liking to the non-invasive behavioural management techniques as opposed to the invasive ones. Order of preference positive reinforcement > tell-show-do > modeling > distraction > physical restraints > general anaesthesia > home > voice control. Based on this study, we can conclude that the children have a very strong opinion regarding their treatment and behavioural management techniques employed and the most preferred was positive reinforcement. The goal of our treatment is to provide them with the most pleasant dental treatment so as to instil a good dental attitude in them.

## INTRODUCTION

Despite breakthroughs in dental treatments over the course of hundreds of years, dental anxiety (DA) remains prevalent in society<sup>1</sup>. Dental anxiety commonly develops during childhood, and a large majority of children report some fear of visiting the dentist (Taani et al. 2005). Dental fear can prevent children from regularly utilising dental services and completing dental treatment, which can have a negative impact on the oral health status and quality of life of these children (Nicolas et al. 2010; Taani 2002; Townend et al. 2000). Dental anxiety often manifests into adulthood, with children who experience anxiety more likely to become symptomatic, rather than proactive, users of dental services when adults (Poulton et al. 2001)<sup>2</sup>. Children with a higher dental anxiety are seen to be more prone to incidences of serial extractions as well as dental caries.<sup>3</sup> Childhood experiences are one of the fundamental reasons for the formation and maintenance of dental anxiety; over 50 percent of the adult population developed dental anxiety due to experiences during childhood.<sup>2</sup> Properly administered behavioural management techniques can aid in making the overall dental experience of the child far more pleasant, and in the process reduces the dental anxiety of the patient. To prevent or help lessen paediatric patients' DA, dental practitioners utilise a number of behavioural management techniques:<sup>4</sup>

A number of behavior management techniques have been used and studied in the past, including the following

1. Tell-show-do (TSD): The dentist explains and shows the child what is to be done. Then the procedure is performed as described.
2. Rewards(positive reinforcement): A toy is given to the child as a reward for being cooperative.
3. General anesthesia: The child has dental treatment under general anesthesia.
4. Physical restraints: The child is wrapped in a physical immobilization device to limit the child's disruptive movements or The dentist and/or dental assistants actively immobilize the disruptive child by holding the child's head, hands, and body.
5. Distraction: Diverting the patients attention by playing a movie that they like in order to shift their attention during the course of treatment.
6. Modelling: A child presenting ideal behaviour during the dental treatment is presented as a role model and the patient is expected to behave as such.
7. Voice control: With a serious look, the dentist raises the volume and tone of his/her voice to gain the disruptive child's attention.
8. Hand-over-mouth exercise (HOME): The dentist places his/her hand over the crying and disruptive child's mouth. When the hand is placed, the dentist speaks directly into the child's ear and tells the child that the hand will be removed after the noise stops. When the noise stops, the hand is removed and the child is praised.

BMTs aid in shaping the patients' coping behaviour to effectively provide dental treatment.<sup>2</sup> Through this a positive dentist–patient relationships can be maintained to provide the best quality dental care and encourages the patient to follow up on their dental care. Communication and a good rapport between the patient and dentist is of utmost importance. Dentists may provide important information throughout the course of the treatment; this involves a

verbal ‘running commentary’ of the ongoing procedures and associated sensations, instrument related noise all for the ease of the patient.<sup>5,6</sup>

Although BMTs are regularly used, there is limited consideration in gaining the opinions of pediatric patients on behavior management,<sup>7</sup> in fact, minimal consideration has been given to listening to the views of dentistry of children.<sup>8,9</sup> Behavioral management is considered acceptable in terms of its clinical efficacy and perceptions of its use.<sup>10</sup> assessment of BMTs has concentrated on clinician and parental feedback. Crossley and Joshi announced British dental practitioners found it ideal in applying BMTs to pediatric patients; Tell– Show– Do was the most widely recognized procedure utilized, a survey revealing that most of the dental specialists found it ideal in using it on their pediatric patients. In evaluating parental acceptability of BMTs, Murphy et al.<sup>10,11</sup> discovered non-intrusive BMTs, for example, Tell– Show– Do and voice control, were most widely accepted, and physical restraints as well as general anaesthesia being least accepted. Another study<sup>12</sup> focused on checking Thai kids' perception and mentalities utilizing video-recorded exhibits of the various management techniques. Higher acceptability scores were accounted for positive reinforcement and Tell– Show– Do, surprisingly individuals demonstrated more liking and preference towards general anaesthesia and other pharmacological managements and physical restraints over voice control. Despite the fact that this study was aimed at investigating the paediatric patients perspectives, there are a few impediments that may have influenced the outcomes.<sup>13,14</sup> For instance, members' past dental encounters were not investigated and a minority announced no encounters of going to the dental practitioner, which may have influenced the outcomes of the study. Likewise the dental anxiety was not estimated; it is possible that their anxiety levels could play a vital role in their attitude towards the behavioural management techniques.

Children are the beneficiaries of all of behavioural management techniques and the treatments and procedures that follow, thus their points of view are essential in increasing the assessment and quality of paediatric patient care pediatric.<sup>15,16</sup> Teaming up with children as dynamic individuals in research could help paediatric dentistry to improve dental experiences and keep up attendance.<sup>8,17</sup> Increasing both quantitative and subjective input from patients with a wide variety of dental anxiety levels could help assess behavioural management techniques generally employed by dental specialists. Our department is passionate about child care, we have published numerous high quality articles in this domain over the past 3 years<sup>18–36</sup>. With this inspiration we planned to pursue research on behaviour management techniques. The point of this investigation, was to assess the children's outlook and perspective regarding the available behaviour management techniques in order to provide them with a holistic and pleasant dental experience and in turn reduce their dental anxiety.

## MATERIALS AND METHODS

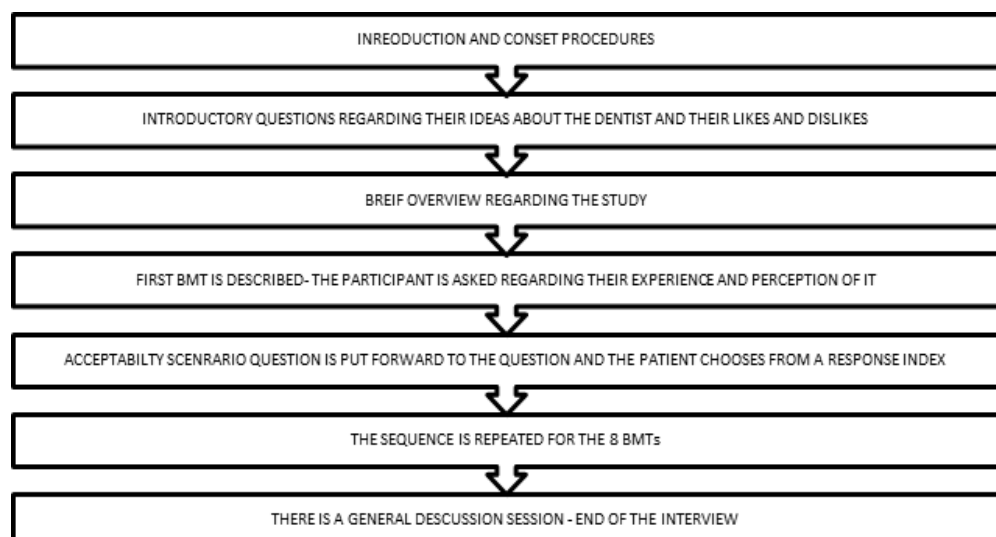
The study was initiated after receiving approval from the institutional ethical committee. The study was performed in the undergraduate clinics numbered 1-6 of Saveetha Dental College and Hospitals. The study group consisted of pediatric patients in the age group of 6 – 10 years with no prior dental visits.

Children who had previous dental visits or were outside the age range were excluded from the study. A total of 100 students were included in the study. A total of 8 behavioral management techniques were assessed in this study:

- 1) Positive Reinforcement
- 2) Tell Show Do
- 3) Modeling
- 4) Distraction
- 5) Hand Over Mouth
- 6) Voice Control
- 7) General Anesthesia
- 8) Physical Restraints.

Videos depicting these behavioural management techniques were prepared and shown to the study population. Informed and written consent was taken from the parents or guardians prior to commencement of the study. Interviews lasted between 5-15 minutes per patient. They were conducted in a calm, quiet and comfortable clinical set up. The interviews consisted of a two-step process. Firstly, the children were given a brief introduction, in order to build a good rapport and to get to know their likes and dislikes, other conceptions regarding the dentist and dental experience. In the second portion of the interview, they were shown the video and were presented with an “acceptability” scenario involving that particular BMT. Based on their perspective and liking the patients rated the BMT on a scale of 1 to 5, where 1= very worried not worried, 2=less worried, 3=neutral, 4= very slightly calm, 5= completely calm. This was followed by a general discussion where the patients were free to talk about their perspective of the various techniques that were not covered in the interview. The results were then tabulated and the statistical analysis was performed with the help of SPSS by IBM and MICROSOFT EXCEL.

The study is depicted in the form of a flow chart as follows<sup>37</sup>:



## RESULTS AND DISCUSSION:

The findings of the present study are tabulated in tables 1-8, where individual responses were tabulated and perception towards each technique is denoted.

KMO and Bartlett's test of sphericity was done to check for statistical correlation which shows a p value of 0.000 which is highly significant and shows perception of children varies drastically with different behaviour management techniques. There were high communalities that were found between the variables included in the present study which indicates a positive correlation between the child and the behavioural management technique.

**Table 1:** Table shows children's perception towards Positive reinforcement with 1 being most apprehensive and 5 being most comfortable

POSITIVE REINFORCEMENT					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	5	5.0	5.0	5.0
	3	5	5.0	5.0	10.0
	4	25	25.0	25.0	35.0
	5	65	65.0	65.0	100.0
	Total	100	100.0	100.0	

**Table 2:** Table shows children's perception towards Hand over mouth exercise with 1 being most apprehensive and 5 being most comfortable

HOME					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	45	45.0	45.0	45.0
	2	31	31.0	31.0	76.0
	3	20	20.0	20.0	96.0
	4	4	4.0	4.0	100.0
	Total	100	100.0	100.0	

**Table 3:** Table shows children's perception towards tell show do technique with 1 being most apprehensive and 5 being most comfortable

TELL SHOW DO					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	2.0	2.0	2.0
	2	8	8.0	8.0	10.0
	3	22	22.0	22.0	32.0
	4	20	20.0	20.0	52.0
	5	48	48.0	48.0	100.0
	Total	100	100.0	100.0	

**Table 4:** Table shows children's perception towards Modelling with 1 being most apprehensive and 5 being most comfortable

MODELLING					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	10	10.0	10.0	10.0
	2	13	13.0	13.0	23.0
	3	18	18.0	18.0	41.0
	4	22	22.0	22.0	63.0
	5	37	37.0	37.0	100.0
	Total	100	100.0	100.0	

**Table 5:** Table shows children's perception towards Distraction with 1 being most apprehensive and 5 being most comfortable

DISTRACTION					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	13	13.0	13.0	13.0
	2	8	8.0	8.0	21.0
	3	21	21.0	21.0	42.0
	4	18	18.0	18.0	60.0
	5	40	40.0	40.0	100.0
	Total	100	100.0	100.0	

**Table 6:** Table shows children's perception towards Voice Control with 1 being most apprehensive and 5 being most comfortable

VOICE CONTROL					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	52	52.0	52.0	52.0
	2	27	27.0	27.0	79.0
	3	11	11.0	11.0	90.0
	4	10	10.0	10.0	100.0
	Total	100	100.0	100.0	

**Table 7:** Table shows children's perception towards Physical restraints with 1 being most apprehensive and 5 being most comfortable

PHYSICAL RESTRAINTS					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	18	18.0	18.0	18.0
	2	32	32.0	32.0	50.0
	3	21	21.0	21.0	71.0
	4	16	16.0	16.0	87.0
	5	13	13.0	13.0	100.0
	Total	100	100.0	100.0	

**Table 8:** Table shows children's perception towards General Anaesthesia with 1 being most apprehensive and 5 being most comfortable

GENERAL ANAESTHESIA					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	43	43.0	43.0	43.0
	2	24	24.0	24.0	67.0
	3	10	10.0	10.0	77.0
	4	12	12.0	12.0	89.0
	5	11	11.0	11.0	100.0
	Total	100	100.0	100.0	

**Table 9:** Table shows statistical Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.621
Bartlett's Test of Sphericity	Approx. Chi-Square	330.041
	df	28
	Sig.	.000

This preliminary aim of the study was to investigate children's perceptions of dental communication and behaviour management techniques. In comparison to negative childhood experiences and perceptions of dentists described by a group of Indian adults<sup>38</sup>, children in this study had good and favourable opinions of their dentists. Children described their dentists as understanding, polite, unbiased approach, and their use of appropriate language. This is suggestive of the fact that the dentist– child patient relationship has moved from an authoritative to supportive position<sup>5</sup>. Encouragingly, the majority of children stated their dentists were informative and extremely patient in explaining all the steps and procedures; by doing so, dentists could be introducing patient consultation into the dental environment as child patients have a right to be involved in their treatment options.<sup>4 39–41</sup>

From this study it was understood that the most preferred behavioural management techniques were the non-invasive ones like positive reinforcement, tell-show-do, modelling, distraction. The children preferred being aware of the steps and procedures, rather than being oblivious as to what was going on. When explained in simple words and with the use of euphemisms, they would be able to comprehend what was happening. They were averse to the more invasive and firm behaviour management techniques such as HOME, Voice control, physical restraints and general anaesthesia.<sup>42,43</sup>

Statistical analyses showed significant differences between behavioural management technique acceptability ratings, but no significant differences in BMT acceptability by dental anxiety, gender, or age. It is evident that there was no difference across age, as the age range was limited from 6- 10 years.

Gender as well did not have an effect, even though the trend for dental anxiety to be higher in girls was evident.<sup>44,45</sup> Overall, Children had a liking towards positive reinforcement, but questioned the value of stickers for the same and how age appropriate they were. Some children were indifferent to the concept of tokens for reinforcement and did find them necessary in order for a good dental experience.<sup>46</sup> Tell-Show-Do was also widely liked and appreciated as in this technique the child felt like they were being treated like an adult. As they were made to understand the steps of what was being performed in simple terms. They thus felt like an important member in the process. Modelling and distraction had almost the same acceptability level. Modelling was liked since the children enjoyed the challenge to behave like an ideal patient. It was considered as a game from their perspective. Distraction was a little less preferred than modelling as the children were in fact aware of all that was happening and even despite being distracted were a little anxious. Most preferred form of distraction was watching their favourite movies and TV shows, followed by playing with toys or other objects. A large proportion of the children's averseness and apprehensiveness to the treatment as well as BMT's, could be attributed to the parents anxiousness and dental anxiety. To a large extent they negative vibe from the parents can trigger such a reaction in the children.<sup>47</sup> Hence, the children did not like the invasive methods like voice control, HOME and physical restraints. Some of the children felt claustrophobic during the physical restraints and the fear of immobility further triggered the anxiety. Voice control and HOME involved the use of a firm and loud voice,<sup>22</sup> they triggered an emotional reaction and were usually administered only after removing the parents from the set-up in order to gain the child's undivided attention. Thus, it was given the lowest acceptability scores out of all the BMT's. General anaesthesia was the third least acceptable BMT, due to association of unconscious sedation only with routine surgery. The parents were more anxious than the children and their response is what mostly triggered a dislike to this method in the children.<sup>48,49,50</sup>

This study's results could mainly have been affected since we only sampled from a restricted age group, and the age could affect the over experience of the child and acceptability of BMTs, hence we can only generalise our present results to this age group. Future research should recruit children from younger as well as the adolescent age groups. In addition, the sample that was studied belonged to a lower socioeconomic group and were able to afford only minimal education, it may have affected the findings. Generally the children generally had positive attitudes

to dentistry and were articulate and mature in their responses. There is a well established correlation between socioeconomic inequalities and oral health and hygiene status, in addition a link between socioeconomic status and dental anxiety as suggested in the study by Davies , has seen to recur in our study as well.<sup>37,51</sup>

## CONCLUSION

Based on this study, we can conclude that the children have a very strong opinion regarding their treatment and behavioural management techniques employed. The most preferred technique was positive reinforcement and the least referred was general anesthesia and there was a significant statistical



difference in the acceptance of behaviour management techniques. The goal of our treatment is to provide them with the most pleasant dental treatment so as to instil a good dental attitude in them. This will help them in the long run by improving their general oral hygiene status as well as motivate them to follow up on regular dental check-ups. This is done by showing them it can be a safe, fun and harmless experience. It also helps the operator by extensively reducing the operating stress and decreases and optimizes the treatment time. It is not the parents who undergo the treatment, hence it is important to meet the parents' demands but far more important to meet the demands of and to advocate for the children instead.

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