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Original Research

Evaluation of children's perception of non-pharmacological behaviour management techniques - An innovative study

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ABSTRACT

Background: Behaviour management is considered a keystone entity in paediatric dentistry. Good behavioural management techniques are essential for managing children. To ensure the acceptance of dental care, appropriate behaviour management technique should be applied.

Aim: To evaluate children's perception of various non-pharmacological behaviour management techniques used by pediatric dentists.

Materials and methods: 68 patients, 9 to 12 years of age were individually shown videos of 8 different non-pharmacological behaviour management techniques: Tell show do, positive reinforcement, distraction, non-verbal communication, parental presence/ absence, protective stabilization, voice control and magic trick. After watching these videos, children were asked to evaluate their perception on a Likert scale.

Results: Positive reinforcement was the most accepted followed by distraction and magic trick. The least accepted were protective stabilization and voice control.

Conclusion: It is important to understand the child's point of view and their opinion should always be considered as they are the ones receiving the dental treatment.

Keywords: *Children, Pediatric Dentistry, Behaviour management, Non- pharmacological*

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INTRODUCTION

Pediatric dentistry has been identified for decades as the specialty which is responsible for the development, research and expertise in the area of behavior management associated with the dental care of children in dental settings. This is a challenging responsilibity, given the broad nature of variables that can arise in the dental setting.[1] Good behavioural management techniques are essential for treating children. Despite the advances, visiting the dentist remains stressful to many children which affect their behavior during treatment.[2]

Anxiety from dentistry is common in children and may lead to avoidance of dental treatment.3 Dentists have a challenging responsibility to gain their patient's cooperation and reach the best treatment. To ensure the acceptance of dental care, appropriate behaviour management technique should be applied. There have been numerous studies on parental and practioner's attitude towards the behavior guidance techniques used in pediatric dentistry. [4-7] Nevertheless, children's perception of various aspects of dental environment and their willingness to accept dental treatment is far more critical to achieve a successful treatment, which has not been given prime importance.

Thus, the present study was conducted to understand children's perception of various non-pharmacological behaviour management techniques used by pediatric dentists.

MATERIALS AND METHODS

SAMPLE SELECTION

A descriptive cross-sectional observational study was conducted by the Department of Pedodontics and Preventive Dentistry, College of Dental Sciences, Davangere after obtaining ethical clearance was obtained from the Ethical committee of College Of Dental Sciences, Davangere

A total of 68 children of 9 to 12 years of age irrespective of sex age and socio economic status was selected from outpatient clinic of the Department of Pedodontics and Preventive dentistry, College of Dental Sciences, Davangere, Karnataka, India

Inclusion criteria

1. Children between the ages of 9 to 12
2. Healthy patients
3. First dental visit

Exclusion criteria

1. Those with any personality traits, suffering from severe systemic diseases, mentally retarded, those who do not wish to cooperate with the study will be excluded.
2. Patients who have had dental treatment.

EVALUATION OF BEHAVIOUR MANAGEMENT TECHNIQUE ACCEPTANCE

Children selected for the study were interviewed individually by a pediatric dentist in a quiet open space area within the department for 10- 20 minutes to build rapport and to assess their views about dental treatment after consent had been taken from the parent. The children were individually shown videotapes of the non-pharmacologic behaviour guidance techniques.

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Videotapes that were shown were:

1. Tell Show Do
2. Positive reinforcement
3. Distraction
4. Nonverbal communication (reassuring touch)
5. Parental presence/ absence
6. Protective stabilization
7. Voice control.
8. Magic trick

All videos were shot in the Department of Pedodontics and Preventive dentistry, College of Dental Sciences, Davangere. Performance of demonstration videos was carried out by the same dentist with the participation of a 10 year old volunteer child who was asked to behave as instructed. Children were then asked to evaluate their perception of each behaviour management technique that was shown to them and grade them on a scale from A to E. [as shown in Table -1]

Grade	Acceptance
A	Excellent
B	Very good
C	Good
D	Average
E	Poor

Table 1 shows: Acceptability Scale

RESULTS

Behaviour Management Technique	A	B	C	D	E
Tell Show Do	34	14	12	5	3
Voice Control	2	2	4	25	35
Positive Reinforcement	45	10	5	4	4
Reassuring Touch	25	25	3	10	5
Parental Absence/ Presence	20	25	15	4	4
Protective Stabilization	1	4	3	22	38
Distraction	40	18	4	4	2
Magic Trick	36	20	4	4	4

Table 2 denotes Response frequencies reported for each Behaviour management technique on the basis of ‘acceptability’ measures

Behaviour management techniques such as Positive reinforcement, Distraction, Magic Trick and Tell-Show-Do have got mean acceptability scores based on 68 sample units to be less than 2 with corresponding ratings “Excellent and Very Good”. Other Behaviour management techniques like Reassurance and Parental Presence mean acceptability scores are 2.19 and 2.22 respectively with corresponding ratings between very good and good. Behaviour management techniques such as voice control and protection stability have high scores of above 4 indicating poor acceptability [as shown in Table 3,4].

Behaviour management Technique	Mean±SD.
Tell show do	1.95±1.17
Voice control	4.30±0.93
Positive Reinforcement	1.67±1.02
Reassuring Touch	2.19±1.28
Parental Absence/ Presence	2.22±1.11
Protective stabilization	4.35±0.92
Distraction	1.70±1.19
Magic trick	1.82±1.15

Table 3: Descriptive Statistics on mean acceptability scores
[Note: Lower the score, better the acceptability and vice-versa]

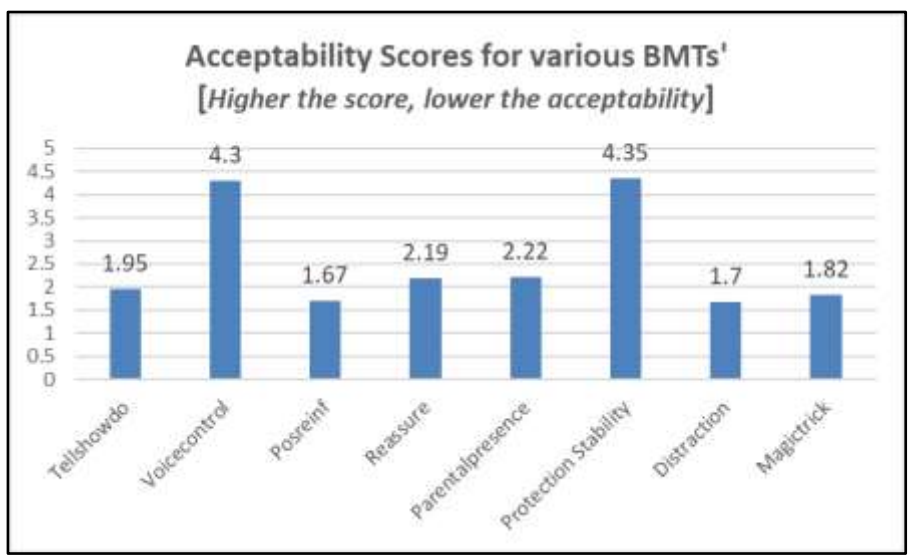

Fig 1: Graph depicting acceptability scores for various behaviour management techniques

When tested for similarity between mean scores of various techniques under consideration using ANOVA, it is found that all mean acceptability scores for different behaviour management techniques are significantly different at 5% level of significance. (P-value of 0.000 <0.05 as shown in Table 5)

Further when inter-technique comparison is tested for mean acceptability scores using post-hoc test, it is found that BM techniques viz., Voice Control and Protection stability stand distinct out of 8 BM techniques under study with lowest acceptability ratings. All other behaviour management techniques form similar group of techniques with scores ranging between 1.67 (positive reinforcement) to 2.22 (Parental Presence).

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	607.529	7	86.790	70.484	**.000***
Within Groups	660.000	536	1.231		
Total	1267.529	543			

Table 5 shows: ANOVA

ASSOCIATION OF MEAN ACCEPTABILITY SCORES WITH AGE AND SEX OF THE RESPONDENTS.

Association age and sex of the respondents on different BMTs were tested using Chi-Square test and found that age and sex are insignificant (p-value >0.05, as shown in Table-6) at 5% level of significance in influencing scores of any/all BMTs; under study. acceptability scores are influenced by sex in case of BMTs' viz., Positive Reinforcement, Protection Stability and Magic Trick at 10% level of significance (P-value > 0.05 but < 0.1).

BMT's	(Age) P-values	(Sex) P-values
Tell show do	0.552	0.477
Voice control	0.795	0.764
Positive reinforcement	0.253	0.052*
Reassuring touch	0.924	0.3
Parental presence	0.526	0.315
Protection Stability	0.948	0.087*
Distraction	0.922	0.248
Magic trick	0.746	0.088*

*Note that acceptability scores are influenced by sex in case of BMTs' viz., Positive Reinforcement, Protection Stability and Magic Trick at 10% level of significance (p-value>0.05 but < 0.1).

DISCUSSION:

In today's society, the position of children is changing with greater emphasis on children's rights. The intimate relationship between parent and child has been changed by society. The professional relationships between dentist and child and dentist and parent have also evolved, dictated by societal changes. Years ago,it was widely accepted that a mother's attitude significantly affected her offspring's behavior in the dental office. Roles in families are changing and now the total family environment has to be considered. A father bringing a child for treatment is not unusual. Also both parents are working and the child presents at the dental office with a caregiver. Parental acceptance of behavior guidance techniques was also greatly considered in numerous studies. The dentist-child patient relationship seems to be moving from an authoritative to a supporting position giving children a right to be involved in their treatment options.[8,9]

Parental acceptance of behavior guidance techniques has been greatly considered in numerous studies, suggesting that income and education clearly influenced parental acceptance of those techniques.[7,10,11] Marshman et al. found that most of the researches were conducted on children rather than with children and recommended that future research should be involving children as much as possible.[12]

Children's perception of behaviour management was similar to that of previous studies.[13-15] Positive reinforcement was the most accepted BMT. Children stated receiving stickers as a positive aspect of attending; these were perceived as being a personal reward for behaving well at the dental clinic. Receiving positive reinforcement facilitated positive dental attitudes in participants and promoted future dental attendance. Two views emerged positive reinforcement: their suitability and value. Participants favourably perceived rewards, although the suitability of the token was an issue. Older children considered sticker rewards as being inappropriate for their age, and this view was prevalent across age groups. Participants suggested that rewards vary in their value during childhood.[14]

Distraction was highly accepted by children. Davies and Buchanan14 found distraction to be highly accepted by old age children. Singh et al.[16] reported better paediatric patient compliance when distraction was used over a wide age range. Children's acceptability of distraction demonstrates its value. By distracting their minds, children felt they would have an uneventful dental appointment. Three benefits of distraction emerged from the interviews: diverting attention, relaxation, and decreased anxiety. The participants reported that thde main main benefit would be the diversion of their attention and concentration away from the dental examination and procedure.

Magic trick was used as for behavior management by Peretz.[17] By seeing the dentist perform a magic trick, children found themselves to be more comfortable and have better rapport with the dentist. While performing the magic trick, the dentist is quickly drawing the attention of the child away from the dental situation to something new and exciting. The dentist may be perceived as a playful and approachable figure and cooperation could be achieved.. Thus, magic trick can be considered as a tool that distracts and relaxes the child, and enables the dentist to provide the necessary treatment.

Children's acceptability of TSD demonstrates its value. Some children did not prefer TSD as they explained that it may lead them to be anxious. The interview data suggest this may relate more to viewing the dental tools rather than the verbal explanation This has been reported by in other studies,[14,15] where TSD was found to be only moderately accepted by children in their study. Nevertheless, it remained highly accepted in our study. Kantaputra et al.[13] found it to be the most popular behaviour guidance technique among children.

Parental presence/absence was moderately accepted amongst the participants. Studies have shown that parents were more comfortable to accompany their children to the dental operatory.[19,20] This was not because of any distrust with the dentist, rather they could not visually verify their child's safety. The male children that did not prefer the parental presence. This may be due to the thought they would look stronger if they underwent their dental treatment without their parents.

Non-verbal communication comprises of factors such as facial expressions, speaking tone, body language and even dentist's attire. However in this study, it was represented in this study in the form of reassuring touch on the shoulder. Results revealed that accepted by children who explained that reassuring touch made them see the dentist as a kind and friendly person. Davies and Buchanan14 found that children greatly valued the friendly communication style of their dentist. This was also consistent with the results of the study conducted by Greenbaum et al.[21] which revealed that physical contact with the child through reassuring touch reduced anxiety and resulted in improved behavior.

Results showed that voice control and protective stabilization were less significantly accepted by children. The use of voice control produced two contrasting themes regarding its use: justification and heightened emotional response. Although only based on observation, it appeared more likely to suggest that the dentist's use of voice control was justified and reasonable, so that treatment could be performed. A minority of the children suggested voice control would heighten their emotional state and increase worry. Passive restraint or protective stabilisation is a controversial technique among clinicians, since its use has been suggested to have the potential to produce serious consequences, such as physical or psychological harm, loss of dignity, and violation of a patient's rights.

In the present study, the objective of each given technique was clearly explained which made a positive impact of the child's understanding of the situation. Children appeared more likely to justify the use of some unlikeable techniques if they received a logic explanation of the dentist's point of view.

CONCLUSION

This study showed that children aged 8- 12 years could give their opinion regarding various behaviour management technique showing their capability to provide their own viewpoints and show comprehensions of behaviour management technique. Children are the future of tomorrow. It is important to understand the child's point of view when they receive dental treatment and their opinion should always be considered as they are the ones receiving the treatment. Positive reinforcement was the most accepted technique whereas protective stabilization was the least accepted

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CONFLICTS OF INTEREST

There are no conflicts of interest

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