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Dentistry Section

Pro-Activeness of Parents in Accepting Behavior Management Techniques: A Cross-Sectional Evaluative Study

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ABSTRACT

Introduction: The contemporary parents are more active and participate in the decision making during dental treatment.

Aim: To assess the parents' acceptance towards behavior management techniques commonly used in the pediatric dentistry in different dental situation.

Materials and Methods: Fifty-one parents participated in the study. Children's dental fear was assessed by the parents before attending power point presentation using Dental Subscale of the Children's Fear Survey Schedule (CFSS-DS). Parents viewed power point presentation of eight behavior management techniques being used during pediatric dental treatment. The techniques were: 1) Voice control; 2) Tell-Show-Do; 3) Positive reinforcement; 4) Parental presence or absence; 5) HOME; 6) Physical restraint; 7) N_2O-O_2 sedation; 8) General anesthesia. Parents were asked to arrange various behavior management techniques from most accepted technique to least accepted technique in various dental situations according to their view.

Results: All the parents completed the questionnaire. Most children show increased anxiety related to dental component of CFSS-DS scale particularly during the administration of local anesthetic. In present study most preferred behavior management technique was Tell-Show-Do followed by positive reinforcement and least preferred behavior management technique was general anesthesia followed by physical restraint.

Conclusion: Children's anxiety level increases during the condition related to dentistry which can be overcome by developing positive approach in children and parents towards dentistry and by utilizing various behaviour management strategies. A generalized low parental tolerance level for firm management techniques was seen in the present study population.

Keywords: Dental anxiety, General anesthesia, Positive approach

INTRODUCTION

The "pedodontic triangle" is equally divided between the child, the parents and the dentist, and there should be a permanent dialogue between all parts of the triangle for better delivery of dental care [1]. Behavior management techniques control and alter the behavior of the child and help to build relationship between child, parent and doctor, at the same time eliminate fear and anxiety provoked by dental visit and ultimately building trust.

To be a successful pediatric dentist, managing uncooperative children is an important part of the practice and it depends on the dentist's ability to acquire and maintain cooperation. To accomplish treatment successfully, variety of techniques can be used. Tell-Show-Do (TSD), positive reinforcement, modeling, voice control, physical restraint, N_2O-O_2 sedation and general anesthesia are some of the techniques used in practice to manage the behavior of the child patient.

One of the core concepts of child dental care is to provide prior information of behavior management techniques to the parents. This information help parents to participate in treatment decisions with the understanding of factors related to their child's proposed dental care. This helps in reducing situational parental anxiety. Thus, awareness of factors that influence parental perception is necessary [2].

Child's needs at the time of treatment and the type and urgency of treatment determine the acceptability of a behavior management technique by parents. There has been a nationwide trend in the law toward expansion of patient's right and the growing demand for informed consent from the parents, dentists can no longer assume that parents will approve any form of behavior management technique without prior informed consent.

The aim of the present study was to assess the parents' attitude toward behavior management techniques commonly used in the pediatric dentistry in different dental situations.

MATERIALS AND METHODS

The present study was designed as a cross-sectional study to evaluate the parental participation in accepting behavior management technique for their child's oral care. Permission to carry out study was obtained from the Smartkidz School, Ahmedabad and Kidz Kingdom School, Ahmedabad, Gujarat, India. Informed consent was obtained from the parents after outlining the goal of the study.

Total 51 parents (age 20 to 40 years) who accompanied their children (age 2 to 4 years) to the Smartkidz School and Kidz Kingdom School were invited to participate in the study. A Power Point presentation and questionnaire were used to examine parents' attitudes toward certain behavior management techniques. Attitude toward the following behavior management techniques were examined. 1) Voice control, 2) Tell-Show-Do, 3) Positive reinforcement, 4) Parental presence or absence, 5) HOME, 6) Physical restraint, 7) N_2O-O_2 sedation, 8) General anesthesia.

Each of the behavior management techniques used in this study has been approved by the American Academy of Pediatric Dentistry (AAPD). According to the AAPD guidelines of behavior management techniques, techniques were divided into two broad categories: (1) Basic behavior management and (2) Advanced behavior management [3].

Anxiety level	Frequency N (%)													
	Dentist	Doctor	Injection	Somebody examine	Open mouth	Stranger touch	Look at you	drill	Sight of drill	Noise of drill	Instrument in mouth	Go to Hospital	White uniform	Dr clean your teeth
Relaxed	13 (25.5)	19 (37.3)	15 (29.4)	10 (19.6)	20 (39.2)	27 (52.9)	34 (66.7)	2 (3.9)	2 (3.9)	6 (11.8)	7 (13.7)	2 (3.9)	21 (41.2)	2 (3.9)
A little uneasy	23 (45.1)	18 (35.3)	0	15 (29.4)	16 (31.4)	14 (27.5)	4 (7.8)	6 (11.8)	0	6 (11.8)	10 (19.6)	34 (66.7)	19 (37.3)	6 (11.8)
Tense	9 (17.6)	8 (15.7)	0	18 (35.3)	8 (15.7)	2 (3.9)	7 (13.7)	32 (62.7)	21 (41.2)	14 (27.5)	15 (29.4)	12 (23.5)	8 (15.7)	13 (25.5)
Anxious	6 (11.8)	6 (11.8)	14 (27.5)	0	7 (13.7)	7 (13.7)	5 (9.8)	7 (13.7)	25 (5.0)	20 (39.2)	11 (21.6)	3 (5.9)	3 (5.9)	19 (37.3)
Very anxious	0	0	22 (43.1)	8 (15.7)	0	1 (2)	1 (2)	4 (7.8)	3 (6.9)	5 (9.8)	8 (15.7)	00	0	11 (21.6)
Total	51 (100)	51 (100)	51 (100)	51 (100)	51 (100)	51 (100)	51 (100)	51 (100)	51 (100)	51 (100)	51 (100)	51 (100)	51 (100)	51 (100)

[Table/Fig-1]: Frequency distribution of anxiety level of study population.

	Mean	Mean rank	SD	p-value
Dental condition	4.37	60.07	0.720	0.002*
General condition	3.84	42.93	0.903	

[Table/Fig-2]: Difference between components of CFSS-DS scale.
- Mann Whitney test used as the test of significance

Children's dental fear was assessed by the parents before attending power point presentation using CFSS-DS - a fear scale for young children, designed by Scherer and Nakamura later revised to include specific dental fear items as one of its subscales by Cuthbert and Melamed [4]. CFSS-DS scale in present study contained total 14 questions. The response format ranged from one (not afraid at all) to five (very afraid), gave a score range from 14 to 70. The parents were asked to complete the CFSS-DS scale first.

Various behavior management techniques were explained to parents through power point presentation in a group. Parents were given a questionnaire form. Questionnaire included various dental situations like intra-oral examination, taking X-ray, fluoride application, restoration of carious tooth, administration of local anesthesia and emergency extraction. Parents were asked to arrange various behavior management techniques from most accepted technique to least accepted technique in various dental situations according to their view. Questionnaire also included giving preferences for behavior management technique that is most acceptable as well as least acceptable to parents in any kind of dental situation.

All statistical analyses were done with the SPSS (Statistical Package for the Social Sciences) software program 15.0. Difference between the response related to general condition and dental condition was evaluated using Mann Whitney test.

RESULTS

All of the parents who were invited to participate agreed to complete the questionnaires (100% compliance). Among 51 children, 30 children (N = 58.8%) ranged in the age from 2 – 3 years and 21 children (N = 41.2%) ranged in the age from 3 – 4 years. Among 51 parents, 33 (N = 64.7%) parents ranged in the age from 20 to 30 years and 18 (N = 35.3%) parents ranged in the age from 30 to 40 years.

Children's anxiety levels were assessed using CFSS-DS scale. Component of CFSS-DS scale was categorized in general situation and situation related to dentistry. Most children showed increased anxiety related to dental component of CFSS-DS scale particularly during the administration of local anesthetic [Table/Fig-1]. Difference in anxiety level between general component and dental component of CFSS-DS scale was statistically significant [Table/Fig-2].

In different dental situation parents ranked the behavior management technique for their children. In present study population most preferred behavior management technique was Tell-Show-Do followed by positive reinforcement and least preferred behavior management technique was general anesthesia followed by physical restraint [Table/Fig-3].

Questions	Behaviour Management (BM)								
	Voice Control	Tell – Show -Do	Physical Restraint	Positive Reinforcement	Parental Presence / Absence	HOME	$N_2O - O_2$ sedation	GA	Total
Examination (most)	0	39 (76.5)	0	8 (15.7)	4 (7.8)	0	0	0	51 (100)
Examination (least)	2 (3.9)	0	0	0	0	4 (7.8)	0	45 (88.2)	51 (100)
X ray (most)	0	37 (72.5)	2 (3.9)	8 (15.7)	4 (7.8)	0	0	0	51 (100)
X ray (least)	2 (3.9)	0	0	2 (3.9)	0	4 (7.8)	0	43 (84.3)	51 (100)
Fluoride (most)	0	41 (80.4)	0	6 (11.8)	4 (7.8)	0	0	0	51 (100)
Fluoride (least)	2 (3.9)	0	0		0	4 (7.8)	0	45 (88.2)	51 (100)
Caries removal (most)	2 (3.9)	43 (84.3)	0	6 (11.8)	0	0	0	0	51 (100)
Caries removal (least0)	0	0	0		3 (5.9)	0	0	48 (94.2)	51 (100)
LA (most)	0	43 (84.3)	2 (3.9)	6 (11.8)	0	0	0	0	51 (100)
LA (least)	0	0	0		0	6 (11.8)	0	45 (88.2)	51 (100)
Emergency (most)	0	44 (86.3)	3 (5.9)	4 (7.8)	0	0	0	0	51 (100)
Emergency (least)	0	0	4 (7.8)		0	10 (19.6)	1 (2)	36 (70.6)	51 (100)

[Table/Fig-3]: Question wise distribution of behavior management (BM) among study subjects.
- Most – most preferred technique by the parents
- Least – least preferred technique by the parents

DISCUSSION

In the present study to assess the child's dental fear, CFSS-DS scale was used. Reliability of scale in Indian subjects was found to be 0.92. Thus the scale was found to be reliable [4]. The high reliability of the scale can be attributed to its focal characteristics and highly specific yet easily understandable questions.

The numbers of factors emerging in the present study were - fear of injection, fear of the dentist's drill and fear of the dental procedure. A pediatric dentist must firstly try to build a rapport with the patient before starting the treatment and try to instill a positive behavior.

Most parents in present study preferred Tell – Show – Do followed by Positive Reinforcement to be employed on their children. This finding was consistent with the study by Abushal, Adenubl in which most preferred techniques were Tell-Show-Do, Positive Reinforcement and Distraction [5]. Findings were also consistent with the study by Benjamin Peretz et al., they found that most parents preferred an explanation as proper approach for treating their children [6].

Most parents in present study did not prefer GA followed by physical restraint and HOME. These findings were consistent with the study by Henry W. Fields in which physical restraint technique was unacceptable by parents but the parents accepted GA in emergency dental situation [7]. This finding was inconsistent with present study.

In the present study parents were explained various behavior management techniques that dentist intend to use. This is why parents showed general acceptability towards various behavior management techniques. This finding is consistent with the finding of the study by Scott M. Lawrence et al., and Carole Havelka [8,9].

In the present study we hypothesize that parents in dental condition which required LA or emergency treatment preferred the firm management techniques to be employed by the dentist but these findings suggest a generalized low parental tolerance level for firm management techniques in our study population. Due to increasing number of working parents and smaller nuclear families parental attitudes had changed and parents showed increased anxieties towards their children [10].

Tell-Show-Do technique was most acceptable and GA was least acceptable by the contemporary parents in the present study. Jonathan J. Eaton et al., showed high level of acceptance of general anesthesia compared to earlier studies may suggest that parental acceptance of this technique is increasing [11]. [Table/Fig-4] summarizes the results of similar studies.

S. No.	Behaviour Management (BM)				
	Author, Year	Place	Sample Size	Mode of Presentation	Results
1	Marilyn Goodwin Murphy et al., 1984 [12]	North Carolina, USA	67	Videotaped segment of actual treatment	Most acceptable techniques - Tell-Show-Do, Positive reinforcement Least acceptable techniques – General anesthesia, Papoose board.
2	Henry W. Fields et al., 1984 [7]	North Carolina, USA	67	Videotaped segment of actual treatment	HOME – unacceptable technique regardless of dental treatment needed Papoose board, General anesthesia and sedation – unacceptable except when used for emergency extraction Physical restraint by the assistant or dentist – acceptable for gaining co-operation of child for injection Positive reinforcement and Tell-Show-Do – consistently acceptable except for dental injection or emergency extraction.
3	Scott M. Lawrence et al., 1991 [8]	Columbus children's hospital	80	Videotaped presentation Group 1: provide prior explanation for each technique Group 2: did not provide prior explanation for any technique videotape with description of and rationale for the	Parents in the experimental group who viewed the behavior management techniques rated each of the management techniques as more acceptable than the parents in the control group who received no explanation of the techniques.
4	Carole Havelka et al., 1992 [9]	Private offices of two pediatric dentists in Columbus, Ohio, the dental clinic at the Columbus Children's Hospital	122 According to social status divided in 2 groups High and Low	Videotaped presentation Group 1: provide prior explanation for each technique Group 2: did not provide prior explanation for any technique	Prior explanation to high group – increase acceptability of HOM and GA Prior explanation to low group – increase acceptability to HOM Least acceptable techniques – HOM, GA, Papoose board, Oral premedication.
5	Benjamin Peretz et al, 1999 [6]	Hebrew University, Israel	104	Verbal explanation	Relaxation with explanation is the most acceptable method followed by explanation and then sedation if the child did not cooperate.
6	Manal Sharaf Abushal et al., 2003 [5]	Saudi Arabia	133	Videotaped presentation Group 1: provide prior explanation for each technique Group 2: did not provide prior explanation for any technique	Group 1: least acceptable technique were HOM and voice control and most acceptable method were distraction, Tell-Show-Do and positive reinforcement Group 2: least acceptable technique was HOM and most acceptable techniques were positive reinforcement and distraction.
7	Jonathan J. Eaton et al., 2005 [11]	Columbus Children's Hospital	55	Videotaped presentation	Most acceptable technique – Tell-Show-Do followed by nitrous oxide oxygen sedation Least acceptable techniques – HOM followed by passive restraint.
8	Mahmoud Alammouri, 2006 [13]	Jordan University of Science and Technology	138	Videotaped presentation	Most acceptable techniques – Tell-Show-Do, positive reinforcement and distraction Least acceptable techniques – HOM, conscious sedation, GA.
9	J. Luis de Leon et al., 2010 [14]	Spain	50	Videotaped presentation	Most acceptable technique – Tel-Show-Do Least acceptable technique – HOM.
10	Saleh Muhammad et al., 2011 [15]	Kuwait	118	Videotaped presentation	Positive reinforcement, effective communication, Tell-Show-Do, distraction, modeling and nonverbal communication were considered as the most approved techniques. Voice control, nitrous oxide sedation, protective stabilization (physical restraint), general anesthesia, hand-over-mouth technique and conscious sedation were the least approved techniques.

11	Elango I et al., 2012 [2]	Bagalkot, Hubli, Karnataka, India	204 Group A: healthy children Group B: special children	Videotaped presentation	Group B parents were less accepting to techniques than group A parents Most acceptable technique Group A: contingent escape Group B: live modeling Least acceptable techniques – HOM and voice control in both group
12	Peretz B et al., 2013 [1]	Tel Aviv	90	Written brochure	Most acceptable techniques – positive reinforcement followed by Tell-Show-Do Least acceptable techniques – restraint followed by voice control
13	Mahdi Jafarzadeh et al., 2015 [16]	Isfahan University, Iran	54	Film of management techniques	Most acceptable technique – Tell-Show-Do Least acceptable techniques – HOM and passive restraint

[Table/Fig-4]: List of published reports of studies regarding acceptance of behavior management techniques by the parents.

LIMITATION

In present study the sample size was small. Survey can be conducted to include large population to understand the parental participation during child's oral care and acceptance of behavior management technique.

Contemporary parents accepted more positive behavior management technique in the present study. This paper aids in the choice of behavior management techniques to be employed to treat young children in the study population and help to build the trust of the parents and child.

CONCLUSION

The anxiety level increases during the condition related to dentistry as confirmed by CFSS-DS scale. The increased anxiety can be overcome by developing positive approach towards dentistry and by the various behavior management techniques. Parents preferred more positive approaches and management techniques even in the emergency dental condition. A generalized low parental tolerance level for firm management techniques in the present study population was seen.

REFERENCES

[1] Peretz B, Kharouba J, Blumer S. Pattern of parental acceptance of management techniques used in pediatric dentistry. *J Clin Pediatr Dent*. 2013;38(1):27-30.
[2] Elango I, Baweja DK, Shivaprakash PK. Parental acceptance of pediatric behavior management techniques: A comparative study. J *Indian Soc Pedod Prev Dent.* 2012;30(3):195-200.
[3] American Academy of Pediatric Dentistry. Guideline on behavior guidance for the pediatric dental patient. 2009;30(7):125-33.
[4] Singh P, Pandey RK, Nagar A, Dutt K. Reliability and factor analysis of children's fear survey schedule-dental subscale in Indian subjects. *J Indian Soc Pedod Prev Dent.* 2010;28(3):151-55.
[5] Manal SA Joseph OA. Attitudes of Saudi parents toward behavior management techniques in pediatric dentistry. *Journal of Dentistry for Children*. 2003;70(2):104-110.
[6] Benjamin P, Dan Z. Parents' attitudes toward behavior management techniques during dental treatment. P*ediatr Dent.* 1999;21(3):201-04.
[7] Henry WF, Bernard M, Marilyn GM. Acceptability of various behavior management techniques relative to types of dental treatment. *Pediatr Dent.*1984;6(4):199-203.
[8] Scott ML, Dennis McTigue, Stephen W, John GO, William FW, Henry WF. Parental attitudes toward behavior management techniques used in pediatric dentistry. *Pediatr Dent.* 1991;13(3):151-55.
[9] Carole H, Dennis McTigue, Stephen W, John O. The influence of social status and prior explanation on parental attitudes toward behavior management techniques. *Pediatr Dent.* 1992;14:376-81.
[10] Grewal N. Implementation of behavior management techniques- How well accepted they are today. *J Indian Soc Pedod Prev Dent*. 2003;21(2):70-74.
[11] Jonathan JE, Dennis McTigue, Henry WF, Michael B. Attitudes of contemporary parents toward behavior management techniques used in pediatric dentistry. *Pediatr Dent.* 2005;27(2):107-13.
[12] Marilyn GM, Henry WF, Bernard M. Parental acceptance of pediatric dentistry behavior management techniques. *Pediatr Dent.* 1984;6(4):193-98.
[13] Mahmoud A. The attitude of parents toward behavior management techniques in pediatric dentistry. *Pediatr Dent.* 2006;30(4):310-13.
[14] Luis L, Guinot J, Bellet LJ. Acceptance by Spanish parents of behavior-management techniques used in paediatric dentistry. *Eur Arch Pediatr Dent*. 2010;11(4):175-78.
[15] Saleh M, Maddi S, Sabiha A. Parental attitude toward behavioral management techniques in dental practice with school children in Kuwait. *Med Princ Pract*. 2011;20:350-55.
[16] Mahdi J, Fahimeh K, Beheshteh M, Soudabeh A. Attitude of parents referred to the department of pediatric dentistry towards different behavioral management techniques used in pediatric dentistry. *Journal of Dental School.* 2015; 33(1): 44-50.

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