Parental Attitude toward Behavioral Management Techniques in Dental Practice with Schoolchildren in Kuwait

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Key Words

Behavior management techniques · Parental attitudes · Schoolchildren · Kuwait

Abstract

Objective: The objective of this study was to evaluate the parental attitude toward different management techniques used during dental treatment of schoolchildren in Kuwait.

Subjects and Methods: One hundred and eighteen parents who accompanied their children to the clinics of Hawally School Oral Health Program in Kuwait participated in this study. The parents viewed a videotape which showed scenes of different behavioral management techniques (BMTs) and then completed a questionnaire. **Results:** Positive reinforcement, effective communication, tell-show-do, distraction, modeling and nonverbal communication were considered as the most approved techniques. Hypnosis and parental separation were moderately 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. A majority (99%) of parents regarded the use of various BMTs as a key factor for successful dental care for their children. Acceptance of each BMT was not related to

parental age, gender, nationality, educational level or occupation. **Conclusion:** Most parents preferred the nonpharmacological techniques to pharmacological techniques. Techniques employing drugs and restraint were considered as least acceptable. Further studies comparing the effectiveness of various BMTs are required.

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Introduction

The foundation for practicing dentistry for children is built on the ability to guide them through their dental experience [1, 2]. While the concept of treating the patient and not just the tooth should be the operative, it is essential with children. Although some children are relaxed and cooperative in the dental treatment environment, some demonstrate disruptive behaviors that make treatment more difficult [3]. Dental treatment for children usually requires the use of behavioral management techniques (BMTs) and it is appropriate for dentists to intensify their efforts to implement and utilize the techniques to gain the child's positive response to treatment [4]. Appropriate use of management techniques can improve the child's behavior in subsequent visits [1, 5, 6].

The objectives of behavior management are to reduce anxiety and fear in children, gain an understanding of parental attitude and establish better dentist-parent communication, parent education and child care [7, 8]. To accomplish treatment successfully, dentists use a variety of techniques to manage, modify and shape the undesirable to more appropriate behavior in order to achieve high-quality comprehensive care [3, 7, 9, 10]. Managing uncooperative children is an important part of the practice of pediatric dentistry and the dentist must occasionally rely on other BMTs as alternatives or adjuncts to communicative management. Some BMTs are not acceptable for parents, and several have been found to be unacceptable [4, 9, 11]. The most unacceptable techniques were parental separation, voice control, protective stabilization, hand-over-mouth technique, nitrous oxide sedation, conscious sedation or general anesthesia as reported previously [4, 9, 11]. The acceptability of a BMT depends on the child's age, anxiety, behavior, treatment needs, feasibility of a technique, parental acceptance and legal/ethical concerns [10, 12].

Tell-show-do, positive reinforcement, and voice control can be effective in mildly disruptive circumstances. Modeling, distraction, and hypnosis have been regarded as preventive and corrective techniques for uncooperative behavior. Hand-over-mouth exercise is used to assist in communication and in obtaining the cooperation of a highly disruptive or defiant child. Protective stabilization is indicated with extremely young, disruptive or disabled children. Sedation or general anesthesia might be indicated when other techniques fail [1, 10]. BMTs cannot be evaluated on an individual basis as to validity, but must be evaluated within the context of the child's total dental experience. Each technique must be integrated into an overall behavioral guidance approach individualized for each child [13]. Behavioral guidance is not an application of individual techniques, but a comprehensive, continuous method meant to develop and nurture the relationship between the child and the dentist, which ultimately builds trust and allays fear and anxiety [13]. Maintaining compliance of children in the dental environment demands verbal guidance skills, extinction of inappropriate behavior, and reinforcement of appropriate responses. Since children exhibit a broad range of physical, intellectual, emotional, social development and a diversity of attitudes, it is important that dentists utilize a wide range of BMTs [13]. Successful behavior guidance enables the dentist to perform quality treatment and promote a positive attitude in the child. A brief description of different BMTs is shown in table 1.

Table 1. Brief description of different BMTs

Technique	Brief description
Tell-show-do	A technique of behavior shaping that involves verbal explanations of procedures in phrases appropriate to the developmental level of the child (tell); demonstration of the visual, auditory, olfactory, and tactile aspects of the procedure (show); completion of the procedure (do)
Positive reinforcement	An effective technique to reward desired behaviors and strengthen the recurrence of those behaviors
Nonverbal communication	The reinforcement and guidance of behavior through appropriate contact, posture, and facial expression
Effective communication	Essential for establishing relationship with the child to develop positive attitude toward dental health
Modeling	Based on the psychological principle that children learn by observing others' behavior, using a model either live or by video to exhibit appropriate behavior
Voice control	Controlled alteration of voice volume or tone to influence and direct the child's behavior, hence the dentist can gain attention, compliance and avert negative attitude or behavior
Parental separation	Involves using the presence or the absence of parents to gain cooperation for treatment
Distraction	The technique of diverting the patient's attention from what may be perceived as an unpleasant procedure
Hand-over-mouth technique	Used to redirect inappropriate behavior that cannot be modified by basic BMTs; the dentist's hand is gently placed over the child's mouth and behavioral expectations are calmly explained with maintenance of patent airways
Protective stabilization	Partial or complete immobilization of the child in order to protect from injury, indicated in uncooperative and disabled children
Hypnosis	Involves hypnotic induction to relax the child, shown to be effective in reducing anxiety in children
Nitrous oxide sedation	Safe and effective technique to reduce anxiety and enhance effective communication
Conscious sedation	Can be used safely and effectively with children unable to receive dental care for mental, physical or medical conditions
General anesthesia	A controlled state of unconsciousness accompanied by loss of protective reflexes, including the ability to maintain an airway independently; recommended for apprehensive, young, medically compromised and special needs children

Table 2. Demographic information of the parents participating in the study

Variable	n	%
Age, years		
<30	20	16.9
30–39	58	49.2
40–49	37	31.4
50 and above	3	2.5
Gender		
Male	54	45.8
Female	64	54.2
Nationality		
Kuwaiti	94	79.7
Non-Kuwaiti	24	20.3
Education level		
Intermediate	3	2.5
Secondary	22	18.6
University	93	78.8
Occupation		
Professional	10	8.5
Semiprofessional	86	72.9
Skilled	2	1.7
Semiskilled	11	9.3
Housewife	6	5.1
Retired	3	2.5

Table 3. Demographic information of the children participating in the study

Variable	n	%
Age, years		
6–8	63	53.4
9–11	37	31.4
12–13	18	15.2
Gender		
Male	53	44.9
Female	65	55.1
Education		
Primary	87	73.7
Intermediate	31	26.3
Reason for visit		
First visit	21	17.8
Prevention	18	15.3
Restorative	66	55.9
Emergency	13	11.0

The objectives of this study were to evaluate parental attitudes toward different management techniques used during dental treatment of schoolchildren in Kuwait and to assess the factors affecting such attitudes.

Subjects and Methods

The study was conducted in the center-based clinics at the Hawally School Oral Health Program, which offers a comprehensive oral health program serving the oral health needs of schoolchildren in Kuwait. The research sample consisted of 118 parents who were selected randomly from an available group of parents accompanying their children to the dental center. The mean age of parents was 37.6 ± 6.2 years (range 24–51; 54 males and 64 females). The majority ($n = 94$) were Kuwaitis compared to 24 non-Kuwaitis. Many had a university degree ($n = 93$) and a large proportion ($n = 86$) had a semiprofessional job. The criteria for participation were: parenthood, literacy, enthusiasm to participate, ability to view the videotape and minimum age of 20 years. The demographic information of the parents is shown in table 2. The mean age of the children was 8.8 ± 2.1 years (range 6–13). The majority ($n = 87$) of the children were at the primary level of education. Most ($n = 66$) of the dental visits were for restorative treatment (table 3).

All parents who agreed to participate received verbal and written information about the purpose of the study. A very small number of parents ($n = 2$) refused because of time constraints. Upon their approval to participate, informed consent was obtained from each parent. The parents were interviewed individually in a quiet private room at the center while their children were receiving the dental care. The participating parent was requested to complete a questionnaire that had three parts: information of the parent and the child; the parents' response to each of the BMTs based on an explanation given, and a videotape segment viewed in advance for each technique prior to answering each question. The BMTs used in this study have been described by the American Academy of Pediatric Dentistry (AAPD) [13]. All the parents were made aware that all the BMTs they were evaluating were approved by the AAPD.

The second part consisted of 14 yes or no questions: tell-show-do; positive reinforcement; nonverbal communication; effective communication; modeling; voice control; parental separation; distraction; hand-over-mouth technique; protective stabilization (physical restraint); hypnosis; nitrous oxide sedation; conscious sedation, and general anesthesia.

The third part (significance of BMTs) had 3 questions which included the necessity or significance of BMTs, previous exposure of the child to BMTs and if informed consent of the parent was compulsory for the use of BMTs on the child. Fourteen different vignettes, each demonstrating a BMT, were produced. Each scene lasted approximately 60 s and showed a single BMT used during a simulated dental appointment scenario on children. The videotape was 15 min long. The dental treatment was performed by a dentist with the help of a dental assistant. Taping sessions were repeated until acceptable examples of all techniques were recorded.

Consent for videotaping and the use of videotapes for research was obtained from the parents of each child shown in the video-

tape. The children demonstrated some form of inappropriate behavior that was successfully modified by BMT. These videotaped dental procedures were validated by 2 pediatric dentists (M.S. and S.A.A.) from the School Oral Health Program. They evaluated and approved the material for presentation of the accuracy and consistently with current AAPD guidelines. A video cassette recorder was used to play the videotapes. Prior to demonstration of each BMT, a brief, standardized verbal introductory explanation was made describing the purpose, rationale and the implementation of each technique. The purpose was to ensure the consistency and accuracy of the information given to the parents. A brief description of different BMTs presented in video vignettes is shown in table 1. After viewing each vignette of the tape, time was allotted (10 s) for the parent to indicate his/her approval of the specific technique.

Statistical Methods

Data entry and analysis were performed using the SPSS statistical package (version 15). One-way frequency tables were generated to show the descriptive statistics. The χ^2 -test was utilized to find out any significant differences between the responses.

Results

The ranking of parental preferences (in the order of decreasing acceptance) of various management techniques used during the treatment of their children is shown in table 4. The most approved techniques by 118 (100%) were positive reinforcement and effective communication. Tell-show-do as well as distraction were accepted by 117 (99.2%) of the parents. The least approved techniques were general anesthesia, which was permitted by 5.9%, hand-over-mouth technique by 5.1% and conscious sedation by 4.2% of the parents. Only two of the BMTs included in the study, positive reinforcement and effective communication, received complete acceptance from all the parents. None of the BMTs were rejected by all of the participants.

This study revealed that there was no significant association between the parents' gender, nationality, educational level, occupation and the different BMTs utilized for the children. Also, the child's age, gender, education level and reason for visit were not associated with parent's expressed attitudes toward any of the BMTs.

Almost all the parents (99.2%) agree that it was essential to use various BMTs in order to achieve successful dental care for their children. Three fourths (75.4%) of the parents indicated that their child had previously experienced a BMT. A majority of the sample (97.5%) believed that it is important to acquire informed consent prior to utilizing any of the different BMTs on their children.

Table 4. Various management techniques ranked by parental acceptability in the study

Technique	Response	n	%
Positive reinforcement	yes	100	100
	no	0	0
Effective communication	yes	100	100
	no	0	0
Tell-show-do	yes	117	99.2
	no	1	0.8
Distraction	yes	117	99.2
	no	1	0.8
Modeling	yes	113	95.8
	no	5	4.2
Nonverbal communication	yes	96	81.4
	no	22	18.6
Hypnosis	yes	78	66.1
	no	40	33.9
Parental separation	yes	61	51.7
	no	57	48.3
Voice control	yes	36	30.5
	no	82	69.5
Nitrous oxide sedation	yes	24	20.3
	no	94	79.7
Physical restraint	yes	23	19.5
	no	95	80.5
General anesthesia	yes	7	5.9
	no	111	94.1
Hand-over-mouth technique	yes	6	5.1
	no	112	94.9
Conscious sedation	yes	5	4.2
	no	113	95.8

Discussion

Our sample size of 118 participants is comparable to those of similar studies [2–4, 7, 9–11, 14, 15]. The response reported by the majority of parents was positive as 99.2% believed that behavioral management was essential to providing good treatment for their children, which is consistent with previous studies [3, 4, 7, 11]. This high rate of acceptance by most parents (97.5%) suggested that well-informed parents were willing to accept BMTs as in several other studies [2–4, 11, 14].

In this study, about three fourths (75.4%) of the parents had previous knowledge of BMTs as these techniques were used earlier with their other children compared to 52.4% in a previous study [11]. A probable explanation for the difference is the lack of sufficient parental knowledge about the timing of the first dental visit and the importance of BMTs for their children prior

to treatment as in Saudi Arabia [16]. In this study acceptability of BMTs was not influenced by parental age, gender, nationality, educational level or occupation similar to earlier studies in terms of age, gender and education level [1–3, 7, 9–11].

This study also confirmed previous findings regarding positive reinforcement [4, 9–11] and tell-show-do [2, 4, 7, 11] as the most accepted BMTs by the parents. Parents remarked that tell-show-do would enable the dentist to explain the procedure to the child using a simple language that the child could understand. Similarly, the distraction technique was highly acceptable as this technique redirects the child's attention from unpleasant and fearful procedures [4, 11].

Hypnosis was moderately approved in this study. Although not commonly used, hypnosis has been shown to be effective in reducing anxiety in children receiving dental treatment. Preliminary reports suggest there may be a beneficial effect from hypnosis used in conjunction with inhalation sedation [17]. Parental separation was a moderately acceptable technique because many parents and children preferred to remain together during the child's dental visit as in a previous study [11].

The least acceptable techniques included voice control, protective stabilization and hand-over-mouth technique. Parents believed that protective stabilization would make the children more fearful, and would be stressful as previously reported [2, 3, 7, 9]. The hand-over-mouth technique appears to be declining [4, 7, 10, 11, 15].

Although nitrous oxide sedation was rated as one of the least acceptable techniques, some previous studies had regarded sedation as a highly acceptable technique [3, 7]. Apparently the parents in our study thought nitrous oxide sedation is not safe. Overall, other pharmacological techniques, especially sedation and general anesthesia, were less acceptable for the parents, similar to other earlier studies [3, 9, 15] despite the fact that the majority of our sample were university graduates not unlike parents of low social status [14]. Surprisingly, the trend of parental acceptance for advanced pharmacological management techniques such as general anesthesia and sedation is increasing, which may be due to increased familiarity with outpatient general anesthesia [7].

The main limitation of this study was the fact that the BMT video vignettes were presented in only one standard order, from least to most invasive, and the order effects in the presentation were not examined. This might undercut the internal validity of the study. We intend to expand this study further to examine the varying order effects of the video vignettes. Another potential limitation was that

the parents were only asked if their children had previous exposure to BMTs, but not a specific BMT. Parents whose children suffered severe and invasive BMTs are probably far less willing to accept BMTs than those whose children experienced a modest effect. Further broader and comprehensive studies comparing the effectiveness of various BMTs used with regard to treatment time and clinical outcomes are required.

Conclusion

Most parents preferred the nonpharmacological techniques (positive reinforcement, effective communication, tell-show-do, distraction, modeling and nonverbal communication) to pharmacological techniques (nitrous oxide sedation, general anesthesia and conscious sedation). Further studies comparing the effectiveness of various BMTs are required.

We recommend that adequate explanation of the various BMTs should be carried out and the dentist must exercise good judgment in the choice and application of the most appropriate techniques in the management of both the child and his parents. It is important to continuously reevaluate parental acceptance of BMTs to maintain optimal dentist-parent communication.

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References

- 1 Peretz B, Zadik D: Parents' attitudes toward behavior management techniques during dental treatment. *Pediatr Dent* 1999;21:201–204.
- 2 Scott S, Garcia-Godoy F: Attitudes of Hispanic parents toward behavior management techniques. *J Dent Child* 1998;65:128–131.
- 3 Lawrence SM, McTigue DJ, Wilson S, Odom JG, Waggoner WF, Fields HW Jr: Parental attitudes toward behavior management techniques used in pediatric dentistry. *Pediatr Dent* 1991;13:151–155.

- 4 Abushal MS, Adenubi JO: Attitudes of Saudi parents toward behavior management techniques in pediatric dentistry. *J Dent Child* 2003;70:104–110.
- 5 Adair SM, Waller JL, Schafer TE, Rockman RA: A survey of members of the American Academy of Pediatric Dentistry on their use of behavior management techniques. *Pediatr Dent* 2004;26:159–166.
- 6 Sharath A, Rekha P, Muthu MS, Rathna Prabhu V, Sivakumar N: Children's behavior pattern and behavior management techniques used in a structured postgraduate dental program. *J Indian Soc Pedod Prev Dent* 2009;27:22–26.
- 7 Eaton JJ, McTigue DJ, Fields HW Jr, Beck M: Attitudes of contemporary parents toward behavior management techniques used in pediatric dentistry. *Pediatr Dent* 2005;27:107–113.
- 8 Owusu G, Al Amri M, Dufresne K, Moore P, Stewart B, Sabbah W: Attitudes of a sample Saudi parents toward management in pediatric dental clinic. *Saudi Dent J* 2005;17:3–9.
- 9 Murphy MG, Fields HW Jr, Machen JB: Parental acceptance of pediatric dentistry behavior management techniques. *Pediatr Dent* 1984;6:193–198.
- 10 Fields HW Jr, Machen JB, Murphy MG: Acceptability of various behavior management techniques relative to type of dental treatment. *Pediatr Dent* 1984;6:199–203.
- 11 Alammouri M: The attitude of parents toward behavior management techniques in pediatric dentistry. *J Clin Pediatr Dent* 2006;30:310–313.
- 12 Grewal N: Implementation of behaviour management techniques: how well accepted they are today. *J Indian Soc Pedod Prev Dent* 2003;21:70–74.
- 13 American Academy of Pediatric Dentistry: Guideline on behavior management for the pediatric dental patient. *Pediatr Dent* 2005–2006;27(suppl 7):92–100.
- 14 Havelka C, McTigue D, Wilson S, Odom J: The influence of social status and prior explanation on parental attitudes toward behavior management techniques. *Pediatr Dent* 1992;14:376–381.
- 15 Wilson S, Antalis D, McTigue DJ: Group effect on parental rating of acceptability of behavioral management techniques used in pediatric dentistry. *Pediatr Dent* 1991;13:200–203.
- 16 Al-Shalan TA: Factors affecting Saudi parents' perception of their children's first dental visit. *J Contemp Dent Pract* 2003;4:54–66.
- 17 Shaw AJ, Welbury RR: The use of hypnosis in a sedation clinic for dental extractions in children: report of 20 cases. *J Dent Child* 1996;63:418–420.