

## The Attitude of parents toward behavior management techniques in pediatric dentistry

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**Purpose:** investigate the parental attitude toward behavior management techniques used in pediatric dentistry

**Methods and materials:** Parents watched a videotape that showed these techniques and then filled a questionnaire.

**Results:** Tell-Show-Do, Positive Reinforcement, and Distraction were highly approved. Voice Control, Parent Separation, and Nonverbal Communication were moderately approved. The Hand-Over-Mouth, Nitrous Oxide Sedation, Conscious Sedation, and General Anesthesia were least approved.

**Conclusion:** The general parental attitudes were positive regarding the behavioral management techniques.

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Behavior management of the child patient is an integral component of the pediatric dental practice to achieve the cooperation of the child patient during dental treatment. A considerable percentage of children do not cooperate in the dental chair, thus prevent the delivery of high quality dental care. To achieve the cooperation of the potentially cooperative children during dental treatment, it became necessary to modify or influence the children's behavior. Thus the dentist must rely on behavior management techniques as an adjunct to communicative management.

These behavior management techniques (BMT) include:

1. Tell-Show-Do (TSD)
2. Positive Reinforcement (PR)
3. Nonverbal Communication (NC)
4. Voice Control (VC)
5. Parent's Separation (PS)
6. Distraction (Dis.)
7. Hand over Mouth (HOM).
8. Physical Restraints (PhR).
9. Hypnosis (hyp).
10. Nitrous Oxide Sedation (NO.).
11. Conscious Sedation (CS).
12. General Anesthesia (GA).

More and more parents are being called to grant the dentist the permission to use these behavior modification techniques. Different studies suggested that all behavior management technique (BMT) were not equally acceptable to parents and some techniques were generally unacceptable.

Murphy *et al*<sup>1</sup> assessed the parental acceptance of BMT employed

in pediatric dentistry. The results indicated that the majority of parents favored tell-show-do, positive reinforcement, voice control, and mouth props.

Fields *et al*<sup>2</sup> investigated whether acceptability of BMT was dependent upon the type of dental procedure accomplished. General anesthesia and sedation was judged acceptable by a majority of parents only for extractions and restorative dentistry.

Havelka, *et al*<sup>3</sup> had examined the hypothesis that parental social status influences preference toward behavior management techniques used during dental treatment of children.

Peretz and Zadik<sup>4</sup> concluded that most parents preferred an explanation before behavior management was considered for their children, so that a detailed explanation would increase the parent's acceptance to firm techniques. Also they conclude that voice control was potentially more accepted by most of parents, with only one-third of parents accepting the papoose board.

Cipes, Miraglia<sup>5</sup> conducted a survey in Connecticut to assess the pediatric dentist attitude for the parental presence during treatment for their children. This study concluded that high percentage of pediatric dentists showed interest in the topic, as it is an important key for patient management.

Lawrence *et al*<sup>6</sup> concluded that informed parents were more positive for behavior management techniques than uninformed parents but both were generally assertive regarding the techniques used. Moreover, the stressful parents were less cooperative for behavior management techniques.

Wilson *et al*<sup>7</sup> studied the rating of acceptability by parents either in groups or alone in BMT displayed in videotape. Results showed that there was no significant difference between groups and individuals, however, there was a consistent trend for those groups to rate BMT as less acceptable than those rating alone.

Recently Scott and Garcia-Godoy<sup>8</sup> reported that an informed parent was more likely to show greater acceptance of a BMT and that hand over mouth and papoose board showed a statistically greater degree of no acceptance than all other BMT.

The purpose of this study was to assess the parental attitude or acceptance toward the various BMT used in the dental office during the dental treatment of the child patient.

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**Methods and materials:**

138 parents participated in this study the parents were attending the dental center of the Jordan University of Science and technology (JUST) in the pediatric clinic. These parents watched a videotape that showed the different behavior management techniques (BMT). Then the parents filled a questionnaire consisting of 3 parts. The first part requested information of both parent’s personal data (gender). The second part of the questionnaire was on parent’s responses on each of BMT in the form of 12 questions with yes or no answers. The third part of the questionnaire was on parent’s general acceptance of behavior management in the pediatric clinic. This part consisted of 4 question of yes or no answer.

The second part of questionnaire was related to BMT. This part was answered by parents to determine their acceptability of each behavior management technique in this study.

The parents determined their acceptability for 12 BMT by answering yes / No questions for the BMT which include:

1. Tell Show Do (TSD).
2. Positive Reinforcement (PR).
3. Nonverbal Communication (NC).
4. Voice Control (VC).
5. Parent’s Separation (PS).
6. Distraction (Dis.).
7. Hand over Mouth (HOM)
8. Physical Restraints (PhR).
9. Hypnosis (Hyp).
10. Nitrous Oxide Sedation (NO.).
11. Conscious Sedation (CS).
12. General Anesthesia (GA).

The third part was to determine parental expectation and general acceptance for BMT. Parents answered Yes / No on 3 questions in this part. These questions are as follow:

1. The necessity or significance of BMT to be performed in order to achieve a successful treatment (BMT importance in treatment)
2. Was any of the listed BMT used on your child? (BMT exposure or experience)
3. Is informed consent of the child’s parent mandatory to be attained in order to apply any of BMT on the child? (Parent Informed consent) Further explanation for any question asked by some parents regarding a behavioral technique was explained and cleared up to the parent before answering the question to the examiner.

**Results:**

Of a total 138 parents participating in this study, the gender of the parents who took part in the study were similar; female participants 70(51.5%) compared to 66 (48.5%) male participants.

Table1 demonstrates parental attitudes concerning the various behavioral management techniques that might be used during the treatment of their children in the dental clinic which consisted of 13 BMT’s. Table 2 reveals parental general prospective toward BMT, exposure to these techniques.

Participants had positive attitudes toward the tell-show-do, positive reinforcement, and distraction, since the overall response was answered by yes on these questions. On the contrary, the majority of the parents did not accept the utilization of hand-over-mouth, physical restrain, nitrous oxide sedation, conscious sedation, and general

anesthesia as it is evidenced from their answers to the question related to these techniques (table 1).

The majority of the parents believed that application of various behavioral management techniques, particularly the techniques were agreed upon as described above, is key factor for successful dental treatment as (91.3%) of them thought that (table 1).

When the parents were asked whether or not their children had a past experience or exposure to any of the behavioral techniques, there was not a major statistical difference among those who had a past experience (52.9%) and those who had not (47.1%) (Table 1)

Many of the participants believed that attaining the child’s parent informed consent is a mandatory process before employment any of the various behavioral techniques on the child (table 1).

In table 2, results revealed general acceptance, among male and female parents, toward these behavioral management techniques tell-show do, positive reinforcement, none verbal communication, voice control ,parent separation and distraction . Furthermore, there were general disapproval on hand-over-mouth, physical restraint, nitrous oxide sedation, conscious sedation, and general anesthesia.

Table 3 presents the general consideration of the both male and female toward various behavioral techniques applied on their children, the previous exposure to any of these behavioral techniques, and the informed consent and its importance.

98.6% of the male parents thought that it was essential to utilize different behavioral management techniques in order to accomplish a successful treatment on their children, while 83.3% of female parents had the same opinion (table 4, fig. 2).

Over half (51.4%) of the male parents sample mentioned that their children have had a past exposure to a behavioral technique. Likewise, more than half of the female parent samples had also been exposed. (table 3).

69% of the male parents and 62% of females parents believed that it is critical to obtain an informed consent before start applying any of the different behavioral techniques, especially invasive techniques like HOM or GA, on their children (table 3).

**Discussion:**

The main reaction reported by all parents was a tendency to give full support, as 98.6 % of parents believed that behavior management is important to provide the proper treatment. This was in agreement with the previous study by Lawrence<sup>6</sup> that both experiments and control groups of parents were generally positive about the techniques.

Most of parents needed prior explanation before the using of behavior management techniques. As Individual parents, when informed, had reported more positive attitude with minimum interference during the treatment session, indicating that prior explanation modified parent’s attitudes as demonstrated in previous studies Lawrence<sup>6-8</sup>

Based on parent’s acceptance in these findings, the techniques were categorized in three tell-show-do, positive reinforcement, and distraction as highly acceptable techniques with more than 75% acceptance. Voice control, non verbal communication and parent separation as moderately acceptable techniques with an acceptance of over 50%. Nitrous oxide, general anesthesia, conscious sedation, physical restrain, hypnosis, and hand-over-mouth as a less acceptable techniques with acceptance rate of less than 50%.

Tell-show-do was listed among the techniques rated as more

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**Table 1.** The Response of Parents to Various BMT's

Technique	response	Number	Percentage
Tell-show-do	Yes	128	92.8%
	No	10	7.2%
Positive Reinforcement	Yes	126	91.3%
	No	12	8.7%
Non verbal communication	Yes	77	55.8%
	No	61	44.2%
Voice control	Yes	78	56.5%
	No	60	43.5%
Parent separation	Yes	76	55.1%
	No	62	44.9%
Distraction	Yes	106	76.8%
	No	32	23.2%
Hand-over mouth	Yes	13	9.4%
	No	125	90.6%
Physical restraint	Yes	33	23.9%
	No	105	76.1%
Hypnosis	Yes	27	19.6%
	No	111	80.4%
Nitrous oxide sedation	Yes	42	30.45%
	No	96	69.6%
Conscious sedation	Yes	38	27.5%
	No	100	72.5%
General anesthesia	Yes	45	32.6%
	No	93	67.4%
BMT importance in treatment	Yes	126	91.3%
	No	12	8.7%
BMT previous exposure	Yes	73	52.9%
	No	65	47.1%
Parent informed consent	Yes	90	65.2%
	No	48	34.8%

acceptable by parents in previous studies Murphy<sup>1</sup>, Havelka C.<sup>3</sup>, Lawrence<sup>6</sup>, Scott and Garcia-Godoy<sup>8</sup>, however positive reinforcement considered more acceptable by parents in the Murphy<sup>1</sup> study. The tell-show-do in our study was a highly acceptable technique among the parents as they thought that this technique would enable the dentist to explain the procedure to the child using a simple analogy or terms for the procedure to be performed and a language that could be understood by the child. While the majority of parents agreed upon the positive reinforcement technique since they believed that it supports rewarding the positive behavior of the child and makes the dental visit more enjoyable when the child get rewarded by his or her dentist, in return the child would like coming to the dental clinic considering the dentist as a friend. The distraction technique was highly appreciated by the parents as this technique redirected the child's attention from what he or she recognizes as an unpleasant procedure, especially during local anesthesia or tooth extraction since the needle and extraction forceps could be perceived as the most fearful procedures in dentistry.

In another study by Lawrence<sup>6</sup>, general anesthesia, passive restrain, hypnosis, and hand-over-mouth were unacceptable techniques. These results were supported by this

study as the majority of parents refused the conscious sedation, nitrous oxide sedation, hypnosis, and general anesthesia. Besides they did not have a clear knowledge of these techniques in term of their advantages and adverse effects, as they never came into contact with these techniques before in their life.

In Murphy's<sup>1</sup> study, conscious sedation and general anesthesia rated as the least acceptable. Conscious sedation was also more acceptable than general anesthesia, which is inconsistent with the finding in this study. In this study, parents accepted general anesthesia more than conscious sedation. It is likely that parents may have considered general anesthesia as less time consuming technique since all of the required dental treatment could be accomplished in a single visit.

In another study by Lawrence<sup>6</sup>, nitrous oxide sedation rated as highly acceptable technique by all parents groups, while general anesthesia was rated as the least acceptable technique. These results were not supported by our study as nitrous oxide sedation was rated a one of the least acceptable technique with acceptance percentage 30.4%.

Scott and Garcia-Godoy<sup>8</sup> found that parents would rather have the child subjected to general anesthesia than hand-over-mouth; such report was supported by this study as general anesthesia was more accepted in this study with percentage of 32.6%, while hand over mouth was accepted by only 9.4% of parents.

Parents evaluated parental separation as moderately acceptable technique. The reason behind that is the parent's did not wish to be separated from their children during the dental treatment as this would give the impression that they spoil their children. This finding was in agreement with an earlier study that reported that, given the option, many parents and children preferred to remain together during child's dental visit.

Females accepted some behavior management techniques slightly more than the males like tell-show-do, voice control, non verbal communication, hand-over-mouth, hypnosis, nitrous oxide sedation, and general anesthesia. On the other hand; males accepted some behavior management techniques more than females, to some extent; like positive reinforcement, parental separation, distraction, physical restrain, and conscious sedation.

Generally speaking, the gender had not any effect on parent's attitude toward the employment of different behavior management

**Table 2.** agreed and Disagreed Percentages of the fathers (males) and Mothers (females) on the Different BMT

Variable	Gender							
	Male				Female			
	Agreed		Disagreed		Agreed		Disagreed	
Number	%	Number	%	Number	%	Number	%	
TSD	64	91.4	6	8.6	62	93.4	4	6.6
PR	67	95.7	3	4.3	57	86.4	9	13.6
NC	35	50	35	50	41	62.1	25	37.9
VC	35	50	35	50	42	63.6	24	36.4
PS	42	60	28	40	34	51.5	32	48.5
Dis	56	80	14	20	49	74.2	17	25.8
HOM	6	8.6	64	91.4	7	10.6	59	89.4
PhR	17	24.3	53	75.7	15	22.7	51	77.3
Hyp	13	18.6	57	81.4	14	21.2	52	78.8
NO	19	27.1	51	72.9	23	34.8	43	65.2
CS	20	28.6	50	71.4	18	27.3	48	72.7
GA	23	32.9	47	67.1	22	33.3	44	66.7

**Table 3.** the Agreed and Disagreed Percentages of Male and Female on the Importance of BMT in Treatment, Past exposure to BMT, Informed Consent.

Variable	Gender							
	Male				Female			
	Agreed		Disagreed		Agreed		Disagreed	
	Number	%	Number	%	Number	%	Number	%
<b>BMT importance in treatment</b>	69	98.6	1	1.4	55	83.3	11	16.7
<b>BMT Exposure Parent Informed consent</b>	36	51.4	34	48.8	38	54.5	30	45.5
<b>BMT importance in treatment</b>	48	68.6	22	31.4	41	62.1	25	37.9

techniques.

The positive, non aggressive communicating techniques of the tell-show-do, positive reinforcement, and distraction appeared to be the most readily acceptable to parents while physical restraint and hypnosis were the least acceptable. A well informed parent more readily accepts the behavior management technique applied on his or her child. Irrespective to the gender of the parent, it was recommended that adequate explanation of various behavioral management techniques could be carried out at the first contact of the dentist with the parent and the child where applicable. This should lead to informed consent. Dentists must exercise good judgment in the choice and application of the most appropriate techniques of all the behavioral techniques in the management of both the child patient and parents.

**Conclusion:**

The findings in this study permit the following conclusions: Tell-show-do, positive reinforcement and distraction were the most readily acceptable techniques.

- Nitrous oxide sedation, conscious sedation, general anesthesia, physical restraint, hypnosis and hand over mouth were the least acceptable techniques.
- Generally speaking, the gender had not an effect on parent’s attitude toward the employment of different behavior management techniques.

- There was not a major difference among parents who had a past experience for BMT and those who had not. Parents generally accepted most of the BMT and the main attitude was a tendency to complete cooperation with the dentist.

- Many of the participants believed that giving the parent an informed consent form is an essential and mandatory process before employment any of the aggressive or invasive behavioral techniques on the child.

- The majority of the parents believed that application of various behavioral management techniques, particularly the techniques were agreed upon as described above, is key factor for successful dental treatment.

- Parents need prior explanation of BMT, so that they will show more acceptance level more than parents who did not receive explanation.

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