

Attitude of Parents Referred to the Department of Pediatric Dentistry towards Different Behavioral Management Techniques Used in Pediatric Dentistry

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Abstract

Objective: Behavior management of uncooperative children is an important principle in pediatric dentistry. By adopting an appropriate behavior management technique, pediatric dentists can treat patients more effectively and create a positive attitude towards dentistry in them. This study aimed to assess the attitude of parents presenting to the Department of Pediatric Dentistry at Isfahan University, School of Dentistry towards different behavior management techniques used for uncooperative children.

Methods: This cross-sectional study was conducted in the Department of Pediatric Dentistry at Isfahan University, School of Dentistry. Fifty-four parents watched a film regarding seven popular behavior management techniques namely tell-show-do, voice control, use of passive restraint devices, active restraint (physical restraint by dental personnel or the parents), use of oral sedatives, hand over mouth and general anesthesia. After watching each technique, the parents expressed their opinion regarding the level of acceptability of the respective technique using visual analog scale (VAS). Data were analyzed using the Tukey's HSD test, repeated measures ANOVA, paired t-test and the Student's t-test.

Results: Of 54 parents, 36 were females and 18 were males aged 23 to 68 years. Of the mentioned techniques, the tell-show-do technique had the highest acceptability (94%). Hand over mouth and use of passive restraint devices had the lowest acceptance (30% and 35%, respectively). Except for the mentioned two, the remaining techniques were well accepted by the parents (52%). No significant association was found between any of the behavior management techniques and age, level of education or occupation of parents.

Conclusion: It appears that acceptability of the behavior management techniques has significantly changed over time and advanced pharmaceutical management techniques have gained increasing acceptance.

Key words: Behavior management technique, Parental attitude, Child's behavior, Pediatric dentistry.

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Introduction:

A high percentage of children presenting to dental offices are restless and agitated and their lack of cooperation and fear of dental procedures are a usual occurrence (1). Thus, behavior

management is the cornerstone of treatment in pediatric dentistry. Several behavior management techniques have been suggested to enhance and accelerate pediatric dental treatments. American Academy of Pediatric Dentistry has approved the use of 11 techniques

for behavior management of children during dental visits. These include pharmaceutical techniques, physical techniques, and verbal techniques (2). Age of children, level of restlessness, acceptance and consent of parents, prohibition by law, experience of a specific technique, ease of application, and efficacy are among the factors that need to be considered for selection of a specific technique by the clinician (3-5).

Informing the parents about different behavior management techniques is an important approach in pediatric dental care. Knowledge about the attitude and tendency of parents towards each technique prevents misunderstanding between the parents and clinicians and builds parents' trust leading to better treatment results (5). Literature is full of studies on the acceptability of different behavior management techniques by the parents (3, 4, 6-13). In most studies, less aggressive techniques (tell-show-do, positive reinforcement) gained significantly higher acceptance compared to more aggressive techniques (voice control, hand over mouth, use of passive restraint devices, oral sedatives and general anesthesia) (6-8,11). Also, it has been demonstrated that parents who were fully informed about the adopted behavior management technique ahead showed more acceptance than those not briefed about it prior to the conduction of technique (9). Due to the variable cultural levels, understanding the behavior of parents is not always easy in dentistry since parental attitudes may have deep cultural roots (5, 14). Only one similar study was found in this respect in Iran, which was conducted by Razavi and Purtaji in 2009 in Qazvin. They reported that of the four different behavior management techniques namely general anesthesia, parent separation, hand over mouth and voice control, parent separation had the highest and general anesthesia had the lowest acceptance among the parents (15). The attitude of parents towards different behavior

management techniques is not constant and may change over time with social and cultural changes. The attitude of parents towards behavior management techniques can significantly affect the clinician's choice of technique. Thus, reviewing this topic and updating the information of clinicians regarding the attitude of parents towards these techniques is important. This study aimed to assess the attitude of parents presenting to the Department of Pediatric Dentistry at Isfahan University, School of Dentistry towards different behavior management techniques.

Methods:

This cross-sectional study was performed in the Department of Pediatric Dentistry at Isfahan University, School of Dentistry during a 3-month period. Understudy subjects included 54 parents selected via non-random convenience sampling who signed written informed consent forms.

Parents had to have minimum educational level of high school diploma and intelligence to comprehend the explained techniques. Incomplete response to questions of the questionnaire or inaccurate marking led to exclusion from the study. Each excluded subject was replaced with a qualified one. Moreover, parents who demanded emergency treatments or asked for treatment under general anesthesia for any reason were excluded from the study.

Parents who signed informed consent forms were seated in a room equipped with a computer and video projection. The questionnaires were distributed among them. Each questionnaire, printed on an A4 paper, contained detailed description of the study objectives and asked for demographics of parents including age, sex, level of education, and occupation. Different behavior management techniques, each with a VAS (100mm length), had been listed on the questionnaire. The score zero in the leftmost

point indicated “completely disagree” and the score 100 in the rightmost point indicated “completely agree”. Parents were briefed on how to select a score on this scale and express their opinion regarding the acceptability of each technique. Parents expressed their opinion by selecting a score on this scale somewhere between “completely disagree” and “completely agree” endpoints.

The value allocated by the parents to each technique was determined by measuring the distance from the selected point on the scale to the start point (point zero). A film showing the seven commonly used behavior management techniques according to Lawrence’s standards (5) was also shown. This video clip demonstrated the seven commonly used behavior management techniques adopted by pediatric dentists in dental offices to manage a child patient. The validity of the film was confirmed by showing it to five expert instructors. The film showed the seven techniques in the following order: 1. Tell-show-do, 2. Voice control, 3. Use of passive restraint devices, 4. Hand over mouth, 5. Active restraint,

6. Use of oral sedatives and 7. General anesthesia. This order was chosen randomly. In this film, first the name of each technique was displayed against a plain background. Next, the respective technique was thoroughly explained by showing a short clip of the steps of behavior management by the clinician.

After showing each technique, parents were allowed sufficient time to express their opinion (like-dislike) towards each method by marking a point on VASs in the questionnaire. Data were statistically analyzed using SPSS version 11 and repeated measures ANOVA, paired t-test, the Student’s t-test and the Tukey’s HSD test.

Results:

Of 54 parents, 36 were females and 18 were males with a mean age of 34.33 ± 9.074 years (range 23 to 68 years); 28 of the parents had high school diploma, 20 had bachelor’s degree, 2 had master’s degree and 2 had doctorate degree. The attitude scores of parents towards the behavior management techniques used for treatment of children are shown in Table 1.

Table 1- Parents’ attitude scores towards different behavior management techniques

Technique	Number	Minimum score	Maximum score	Mean score
Tell-show-do	45	40	100	94.55
Active restraint	45	0	100	57.01
Oral sedatives	45	0	100	54.62
Voice control	45	0	100	53.37
General anesthesia	45	0	100	51.74
Use of passive restraint devices	45	0	100	35.11
Hand over mouth	45	0	100	30.51

Statistical tests found significant differences in this regard among different techniques ($p < 0.001$) (Table 2).

The tell-show-do technique had the highest acceptance among parents (94%). Hand over mouth and use of passive restraint devices had the lowest acceptance (30% and 35%, respectively). Except for the mentioned two, the remaining techniques were well accepted by the

parents (over 50%). This study showed that none of the behavior management techniques had significant associations with age, level of education or occupation of parents ($p = 0.12$). The difference in the attitude score of parents between the two genders towards the tell-show-do and voice control techniques were significant (Table 2).

Table 2- Comparison of the mean score of parents’ attitude towards different behavior management techniques based on gender

Behavior management techniques	Gender	Number	Mean	Standard deviation
Tell-show-do	Male	18	87.5556	16.21627
	Female	36	98.0556	4.91612
Voice control	Male	18	67.3889	34.97417
	Female	36	46.3411	34.02365
Use of passive restraint devices	Male	18	44.4444	34.68382
	Female	36	30.4444	30.74731
Hand over mouth	Male	18	37.0556	37.61708
	Female	36	27.2500	29.55225
Active restraint	Male	18	56.0000	32.27638
	Female	36	57.5278	32.22996
Oral sedatives	Male	18	65.6667	36.00000
	Female	36	49.1111	36.35993
General anesthesia	Male	18	66.5556	26.58869
	Female	36	44.3333	40.61245

The highest mean difference was found between the tell-show-do and hand over mouth techniques (with a mean difference of 64.03). The lowest mean difference was found between the voice control and use of oral sedatives (mean difference of 1.25). The difference among the

voice control, active restraint, general anesthesia and hand over mouth was not significant. The difference between hand over mouth and use of passive restraint devices was not significant either (Table 3).

Table 3- The mean difference in the parents’ attitude scores towards different behavior management techniques

Tell-show-do	Voice control	Use of passive restraint devices	Hand over mouth	Active restraint	Oral sedatives	General Anesthesia
Tell-show-do	MD= 18.41 <i>p</i> <0.001	MD=51.44 <i>p</i> <0.001	MD=64.3 <i>p</i> <0.001	MD=37.53 <i>p</i> <0.001	MD=39.92 <i>p</i> <0.001	MD=42.81 <i>p</i> <0.001
Voice control		MD=18.25 <i>p</i> <0.001	MD=22.85 <i>p</i> <0.001	MD=3.64 <i>p</i> =0.12	MD=1.25 <i>p</i> =0.13	MD=1.62 <i>p</i> =0.28
Use of passive restraint devices			MD=4.59 <i>p</i> =0.23	MD=21.90 <i>p</i> <0.001	MD=19.51 <i>p</i> <0.001	MD=16.6 <i>p</i> <0.001
Hand over mouth				MD=21.90 <i>p</i> <0.001	MD=24.11 <i>p</i> <0.001	MD= 21.22 <i>p</i> <0.001
Active restraint					MD=2.38 <i>p</i> =0.271	MD= 5.27 <i>p</i> =0.12
Oral sedatives						MD=2.88 <i>p</i> =0.12

Discussion:

Many previous studies have used VAS to quantify the acceptance and attitude of parents

towards different behavior management techniques. They have considered VAS score of over 50mm as an indicator of acceptance by the parents (5, 8, 16, 17). Selection of this value has

been completely contractual. Considering this value, all techniques evaluated in the current study, except for hand over mouth and use of passive restraint devices, were well accepted by the parents. The mean attitude scores for these techniques had a wide standard deviation; this indicates a distinct variation in parents' attitudes towards these techniques. The attitude scores of parents towards different techniques are shown in Table 1. In the current study, the tell-show-do technique had the highest acceptance among parents. This technique had relatively high acceptance in previous studies as well (5, 7, 8, 16). It is the safest and most non-invasive behavior management technique and this explains its popularity and no change of attitude towards it over time.

In a study by Razavi and Purtaji (2009) in Qazvin, among four behavior management techniques including general anesthesia, parent separation, hand over mouth and voice control, parent separation gained the highest and general anesthesia gained the lowest acceptance among the mothers. However, in their study, mothers were mainly from the moderate and low socioeconomic classes and this result may be due to the high cost of general anesthesia and hospital admission fees and their lack of affordability (15).

The mean score of attitude towards the general anesthesia, active restraint, oral sedatives and voice control was similar and based on the aforementioned criterion, these techniques were all accepted by the parents in the current study. The parental attitude towards immobilization by the parents and dental personnel referred to as active restraint by Murphy, *et al.* (1984) and also voice control has not significantly changed over time and both these techniques have moderate to high acceptability (7).

Review of the four above-mentioned studies revealed higher acceptability of the use of oral sedatives. In 1984, sedation ranked among the techniques with lowest acceptance. In 1991, this

technique was still not well accepted but in 2005, it ranked among the well-accepted techniques. The situation was the same for general anesthesia as well indicating the increased acceptability of pharmaceutical techniques among the parents. In our study, general anesthesia was among the well-accepted techniques and in a study by Eaton, *et al.* (2005), it was ranked the third most accepted technique (9). However, in the study by Murphy, *et al.* in 1984, general anesthesia had the lowest acceptability after papoose board (7). In a study by Lawrence, *et al.* in 1991 this technique had the lowest acceptance among parents as well (5). These points to an increase in acceptability of general anesthesia compared to other techniques in the past decade. This increased tendency may be related to increased knowledge and acquaintance of the parents with outpatient treatments under general anesthesia. In the recent years, outpatient surgeries in surgical centers have gained growing popularity (18).

In the current study, the highest standard deviation belonged to general anesthesia indicating wide variation in parental attitudes towards this technique compared to other modalities. Use of passive restraint devices was ranked the second least accepted technique with a significantly different mean score of attitude. Murphy, *et al.* in 1984 and Scott and Garsia-Godoy in 1998 reported that this technique gained the least acceptance (7, 8). In 1991, Frankel in his study on mothers of children under treatment stated that generally this technique was not at all accepted by the mothers (19).

In our study, hand over mouth had the least acceptance among the parents. It appears that the acceptability of this technique has decreased over time among parents. In studies by Murphy, *et al.* in 1984 and Lawrence, *et al.* in 1991, hand over mouth was the fourth least accepted technique (5, 7).

In a study by Wilson, *et al.* in 1991, hand over

mouth had the lowest acceptance (10). In the study by Scott and Garsia-Godoy in 1998, hand over mouth was ranked the third least accepted technique (8). A clear dislike was noted towards this technique in a study by Fields, *et al.* in 1984 on treatment of emergency cases (20).

Considering all the above, two points are worth mentioning:

1. Acceptability of aggressive behavior management techniques especially use of passive restraint devices and hand over mouth decreased among parents over time.
2. Acceptability of the modern pharmaceutical techniques namely sedation and general anesthesia increased among parents over time.

In the current study, no significant association was noted between the acceptability of different techniques and age, level of education or occupation of the parents. Regarding gender, the attitude score of parents was significantly different towards the tell-show-do and voice control. No difference was noted regarding other techniques. Previous studies reported similar results regarding age, gender, level of education and socioeconomic status (3, 5, 15). Some studies have reported differences in attitude of parents from different social classes.

Murphy, *et al.* in 1984 demonstrated that parents of a higher social class had less tendency towards general anesthesia (7). According to a study by Havellea *et al.*, parents of higher social classes showed higher acceptance towards the use of papoose board compared to parents of higher social classes (15).

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The results of the current study and the previous investigations indicate that the acceptability of different techniques at a specific period of time may be similar among parents in different studies but this may change over time. On the other hand, the obtained results in the current study may be generalized to the parents of the same group. Further evaluation of the parental attitude towards different behavior management techniques seems necessary.

Conclusion:

Comparison of the current results with those of previous studies reveals that the acceptability of different technique is subject to change in time. Parents still have negative attitude towards aggressive physical techniques (passive restraint and hand over mouth) as in the past. But, advanced pharmaceutical techniques (sedation and general anesthesia) have gained higher acceptability over time.

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Conflict of Interest: "None Declared"

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