Pattern of Parental Acceptance of Management Techniques Used in Pediatric Dentistry

Peretz B* / Kharouba J** / Blumer S***

Aim: *To evaluate parents' acceptance of management techniques in Israeli pediatric dental clinics.* ***Study Design****: Ninety parents who accompanied their children to three pediatric dental clinics provided information on selected parameters including their attitudes about management techniques.* ***Results****: 68.9% of the parents preferred to stay in the treatment room. The most accepted technique was positive reinforcement (81.1%) followed by tell-show-do (TSD) (76.7%, with younger parents more accepting than older, p = 0.049). The least accepted techniques were restraint (1.1%) and voice control (7.8%, especially by parents with the highest dental anxiety, p = 0.002). Sedation was unacceptable by 15.6% of the parents: those with the lowest dental anxiety agreed to sedation significantly more than those with greater dental anxiety (p = 0.031).* ***Conclusions****: Parents preferred more positive approaches and management techniques that involve demonstrations geared for the child's level of understanding. Restraint and voice control were more strongly rejected than sedation.*

Keywords*: Management, parents, acceptance, children dental anxiety*

INTRODUCTION

Management techniques are essential in paediatric dentistry. Tell-show-do (TSD), positive reinforcement, modelling, voice control and physical restraint are some of the techniques used in daily practice.[1-6] When behavior management techniques fail, other methods, such as sedation or general anaesthesia may be required. The commonly employed behavioral management techniques vary in nature and intensity. TSD, modelling and positive reinforcement are obviously less harsh than voice control and physical restraint.

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.[3] Behavior management techniques are not equally accepted by parents, and several techniques have been found to be altogether unacceptable.[7, 8] The acceptability of a behavior management technique depends, among other factors, on the child's needs at the time of treatment, as well as the type and urgency of treatment, which influences both the selection of a particular technique and parental acceptance of that technique.[9]

While dentists continue to use these same management techniques,[10] there is mounting evidence of increased parental participation during the child's dental experience.[11-13] With the increasing recognition of children's rights and the growing demand for informed consent from the parents, dentists can no longer assume that parents will approve any form of behaviour management technique without question.[14,15] Previous studies in which parents viewed videotapes containing segments of behavior management techniques found that pharmacological techniques, hand-over-mouth, Papoose Board® (Olympic Medical Co, Seattle, WA) and physical restraint were rated as unacceptable by most parents, and that voice control and mouth prop were marginally acceptable, while positive reinforcement and TSD were overwhelmingly acceptable.[7-9]

More recent studies emphasized the importance of informing the parents in detail about the management techniques that the dentist intends to employ, and revealed that informed parents were significantly more accepting of behavior management techniques than uninformed parents.[15,16] Although there was no significant difference in parental acceptance of management techniques when parents viewed videotapes containing the management technique in groups or individually, there was a consistent trend for those in groups to rate them as being less acceptable than those who did the rating alone.[17] Also, parents from a low social status were found to be less accepting of the more aggressive techniques, such as general anesthesia.[16] Other investigators have shown that when parents were asked about their attitudes towards behaviour management techniques after being present in the treatment room, they tended to be more accepting and permissive, even towards physical restraint.[18]

Since management techniques are treatment tools in the "armamentarium" of the dentist, it is important to constantly evaluate the

* Benjamin Peretz, DMD Associate Professor and Head. Department of Paediatric Dentistry, The Maurice and Gabriela Goldschleger School of Dental Medicine, Tel Aviv University, Tel Aviv, Israel.

** Johnny Kharouba, DMD Senior Staff Member. Department of Paediatric Dentistry, The Maurice and Gabriela Goldschleger School of Dental Medicine, Tel Aviv University, Tel Aviv, Israel.

*** Sigalit Blumer, DMD Senior Staff Member. Department of Paediatric Dentistry, The Maurice and Gabriela Goldschleger School of Dental Medicine, Tel Aviv University, Tel Aviv, Israel.

Send all correspondence to: Prof. Benjamin Peretz, Head, Department of Paediatric Dentistry, The Maurice and Gabriela Goldschleger School of Dental Medicine, Tel Aviv University, Tel Aviv, Israel

Phone: 972-54-4488777
Fax: 972-3-6409250

Email: bperetz@post.tau.ac.il

Table 1. Parents' evaluation of their own children.

	N	%
General nature		
Calm, patient	78	86.7
Impatient, sensitive	10	11.1
Wild	2	3.2
Parents reaction when child does not behave properly at home		
Firmness	14	15.6
Anger	38	42.2
Calm/submissive	38	42.2
Prediction of child's behaviour at present visit		
Good - cooperative	77	85.6
Partial cooperation	9	10
Difficulties	4	4.4
Parents assessment of children's dental status		
Good-fair	81	90
Bad	9	10

Table 2. Parents' preferences regarding their presence in the treatment room and choice of the dentists' approach when children do not cooperate.

	N	%
Presence in treatment room		
Always present	63	68.9
Only if needed	24	27.8
Never present	3	3.3
Dentist approach when children do not cooperate		
Stop treatment/calm the child, complete treatment	76	84.5
Help dentist, including restraint of the child	13	14.5

attitudes of parents towards these techniques. The purpose of the present study was to evaluate parents' current attitudes towards the management techniques in three dental clinics in Israel.

MATERIALS AND METHOD

Ninety parents who accompanied their children to the Department of Pediatric Dentistry at the Tel Aviv University School of Dental Medicine in Tel Aviv (25 parents), as well as to two private clinics specializing in paediatric dentistry in Tel Aviv (30 parents) and in Haifa (35 parents) participated in the study. Those who were invited to participate had accompanied their children to these visits between January and March 2012. In the waiting room, the parents were given a written brochure, informing about the nature of the study and describing the various management techniques that the children's dentists planned to use in details.

The questionnaire had been tested in a pilot study on 15 parents (not included in the present study) to ensure the clarity of the questions. The behavioral categories were developed by the authors, and included selected variations of categorizing behaviors. It included the following information:

a. Demographics – the ages of the parents and the children, the number of children in the family and the order of the patient.

Table 3. Parents' attitudes toward the management techniques.

	N	%
Tell-Show-Do (TSD)		
Total unacceptance	1	1.1
Dislike, apply only if really needed	20	22.2
Acceptance	69	76.7
Modeling		
Total unacceptance	17	18.9
Dislike, apply only if really needed	53	58.9
Acceptance	20	22.2
Positive reinforcement		
Total unacceptance	3	3.3
Dislike, apply only if really needed	14	15.6
Acceptance	73	81.1
Voice control		
Total unacceptance	31	34.4
Dislike, apply only if really needed	58	64.4
Acceptance	1	7.8
Restraint		
Total unacceptance	47	52.2
Dislike, apply only if really needed	42	46.7
Acceptance	1	1.1
Relaxation/hypnosis		
Total unacceptance	28	31.1
Dislike, apply only if really needed	48	53.3
Acceptance	14	15.6
Sedation		
Total unacceptance	14	15.6
Dislike, apply only if really needed	68	75.6
Acceptance	8	8.9

b. Dental – if the child had previously visited a dentist, and if so, when, and the parents' assessment of their child's dental status (good-fair, bad).

c. Behavioural – the parents' evaluation of their children's nature (calm/patient, impatient/sensitive, wild), the parents' reaction when their child does not behave properly at home (firmness, anger, calm/submissive), parental prediction of the child's behavior during the imminent dental treatment (good-cooperative, partial cooperation, difficulties), parental attitudes towards the dentist's management techniques and the level of the parents' own dental anxiety. The management techniques which the parents were requested to provide an opinion included: TSD, modelling, positive reinforcement, voice control, restraint, relaxation/hypnosis. Sedation (nitrous oxide and oxygen alone or combined with pharmacological sedation) was added to the list as the last resort for carrying out dental treatment when behaviour techniques failed and treatment was imperative (none of the clinics used the Papoose board).

The parents' own dental anxiety was assessed by using the Corah's Dental Anxiety Scale (DAS).[19] DAS is a well-known tool,

Table 4. Parents' attitudes toward the management techniques in terms of the parent's age, the child's age and the level of parental dental anxiety* (one-way analysis of variance).

	Reject	Accept when needed	Always accept	P value
TSD	**N = 1**	**N=20**	**N=69**	
Age of parent	38.2 ± 4.1	45.5 ± 4.0	41.1 ± 5.6	0.049
Age of child	12 ± 3.3	10.0 ± 3.6	8.4 ± 3.3	NS
DAS	7 ± 2.3	7.8 ± 2.4	8.9 ± 2.9	NS
Modeling	**N = 17**	**N = 53**	**N = 20**	
Age of parent	40.5 ± 4.4	42.7 ± 4.8	41.6 ± 7.8	NS
Age of child	8.8 ± 2.7	8.9 ± 3.5	8.6 ± 3.8	NS
DAS	8.6 ± 1.5	8.8 ± 3.0	8.0 ± 3.1	NS
Reinforcement	**N = 3**	**N = 14**	**N = 73**	
Age of parent	39.0 ± 1.0	44.0 ± 6.3	41.8 ± 5.5	NS
Age of child	8.0 ± 4.6	10.3 ± 3.7	8.5 ± 3.3	NS
DAS	6.3 ± 2.1	7.1 ± 1.7	8.9 ± 2.9	NS
Voice control	**N = 31**	**N = 58**	**N = 7**	
Age of parent	42.3 ± 5.5	41.6 ± 5.2	44.7 ± 8.6	NS
Age of child	9.5 ± 3.6	8.2 ± 3.3	10.9 ± 3.3	NS
DAS	10.2 ± 3.2	7.9 ± 2.3	8.1 ± 3.0	0.002
Restraint	**N = 47**	**N = 42**	**N = 1**	
Age of parent	41.8 ± 5.7	42.1 ± 5.5	49	NS
Age ofchild	8.8 ± 3.7	8.7 ±3.2	10.5	NS
DAS	8.9 ± 2.8	8.3 ± 2.8	5	NS
Relaxation/ hypnosis	**N = 28**	**N = 48**	**N = 14**	
Age of parent	41.3 ± 4.4	42.1 ± 5.3	43.1 ± 8.2	NS
Age ofchild	8.6 ± 3.4	9.3 ± 3.5	7.5 ± 2.9	NS
DAS	9.0 ± 2.2	8.5 ± 3.1	8.1 ± 2.7	NS
Sedation	**N = 14**	**N = 68**	**N = 8**	
Age of parent	42.1 ± 5.0	41.9 ± 5.8	42.1 ± 5.1	NS
Age of child	9.6 ± 3.4	8.6 ± 3.3	9.3 ± 4.8	NS
DAS	7.6 ± 2.5	9.0 ± 2.9	6.8 ± 1.2	0.031

*As scored on the Corah's Dental Anxiety Scale (DAS).[19]

which comprises four multiple-choice questions dealing with the individual's subjective reactions about (1) going to the dentist, (2) waiting in the dentist's office for treatment, (3) having teeth drilled, and (4) having teeth scaled. Five possible answers that are rated in ascending order from 1 to 5 are provided, such that each question has a possible maximum score of 5, with a total possible maximum of 20 for the entire scale. The parents were also asked to describe how they would prefer to deal with situations in which their children would not cooperate during treatment. The study was approved by the Helsinki committee of Tel Aviv University.

The collected data were analysed using descriptive statistics, and one-way analysis of variance (ANOVA) was used to compare the responses to the various management techniques. All statistical analyses were done with the SPSS (Statistical Package for the Social Sciences) software program 15.0 (SPSS Inc., Chicago. IL., USA), and the level of significance was set at $p<0.05$.

RESULTS

All of the parents who were invited to participate agreed to complete the questionnaires (100% compliance). They included 23 males and 66 females whose ages ranged from 27 to 59 years (mean 42.0 ± 5.6 years). The children included 45 boys and 45 girls whose ages ranged from 2 to 15 years (mean 8.8 ± 3.4 years). There were between 1-3 children in 92% of the families, 44 of the study children (49%) were firstborn, 27 (30%) were the second in order, and 19 were third or more in order. Most (n=86, 96%) of the children had previously undergone dental treatment.

The results of the parents' evaluation of their own children are given in Table 1. Most parents described their children as being calm and patient (86.7%), most predicted that their children's behavior during the present visit would be good and cooperative (85.6%), and most (90%) assessed their children's dental status as good or fair.

Table 2 shows the parents' preferences about being present in the treatment room and what they considered would be a proper approach on the part of the dentist towards uncooperative children. Most parents (68.9%) indicated that they preferred to stay in the treatment room, 27.8% indicated that they would stay only if needed, and 3.3% responded that they would not want to stay in the room. Most of the parents (84.5%) responded that they preferred to stop the treatment of an uncooperative child, or to stop and calm the child and then resume treatment. The rest (14.5%) said they would help the dentist even to the point of restraining the child.

Table 3 lists the attitudes of the parents towards the various management techniques. The most accepted technique was positive reinforcement (81.1%) followed by TSD (76.7%). The least accepted technique was restraint (1.1%), followed by voice control (7.8%). Relaxation or hypnosis was entirely unacceptable to 30.1%, while sedation was unacceptable to 15.6%. There was no association between the following parameters and the parents' attitudes towards management techniques: the number of children in the family and the order of the treated child, previous dental experience, assessment of the children's dental status, the evaluation of the children's nature, the parents' reaction when the child did not behave properly at home, and the prediction of children's behavior. The mean DAS score of parental dental anxiety was 8.6 ± 2.8, with no significant gender difference (8.1 ± 2.3 and 8.8 ± 2.9 for males and females, respectively).

Table 4 shows the parents' attitudes towards the management techniques according to their own age, their child's age and relation to parental dental anxiety. Parents aged 41.1 ± 5.6 years favored the TSD technique significantly more than parents aged 45.5 ± 4.0 years ($p = 0.049$). The attitude towards voice control emerged as being influenced by the parents' dental anxiety: parents whose dental anxiety was the highest rejected it significantly more than parents with lower anxiety levels ($p = 0.002$). Interestingly, parents who demonstrated the lowest dental anxiety approved of sedation significantly more than parents with higher levels of dental anxiety ($p = 0.031$).

Finally, parents' attitudes towards modelling, positive reinforcement, restraint and relaxation/hypnosis, as well as their wish to stay in the treatment room and their reaction when their child misbehaves at home were not significantly influenced by the age of the parents, the age of the children or the level of parental dental anxiety.

DISCUSSION

The parents in our study received detailed verbal explanation about the possible approaches the dentist would choose to manage their children's behavior during dental treatment before it began. Most parents in our study preferred positive reinforcement to be employed on their children, unlike previous findings published more than a decade ago where the approach most accepted by the parents was relaxation.[8] Likewise, while voice control was accepted by only 7.8% of the parents in the present study, all parents queried in a previous study accepted it.[8] Restraint was the least acceptable technique among our parents. Taken together, these findings suggest a generalized low parental tolerance level for firm management techniques in our study population. They may also suggest that parental attitudes could be influenced by the way the management techniques were presented, and that informed patients were more accepting of firm measures in the past.[11-15] We propose that parents are more pro-active today and less likely to accept the dentist's approach without question.

Interestingly, the response to TSD was significantly influenced by the parents' age, with the younger ones strongly favouring it compared to the older ones ($p = 0.049$). We have no explicit explanation for this finding and consider that it may reflect somewhat less patience and a greater desire to be done with the treatment as quickly as possible.

The mean DAS score of parental dental anxiety was 8.6. This score is considered medium on a scale of 4 to 20.[20,21] It should be noted, however, that parents completed the DAS questionnaire while waiting for the treatment to be administered to their children and not to themselves. The lack of any significant gender difference in parental dental anxiety is not in accordance with previous studies which showed that females report higher dental anxiety than males.[20,21] Gender differences in self-report questionnaires must always be considered with some caution because men may tend not to fully reveal their feelings, while women are more likely to express their anxieties more easily.[22] It may be that the on-going changes in balancing the status of women and men may be bringing about a lessening of gender differences, making men more comfortable to be more honest in reporting on emotional issues.

Parental dental anxiety seemed to play a role in the parents' attitudes towards voice control as well as towards sedation: those with the highest scores tended to reject these techniques, while those with the lowest scores tended to approve them.

While the vast majority of parents wanted the treatment stopped when the child misbehaved or became uncooperative, only 14.5% said they would help to restrain the child so that the dentist could finish the treatment. This finding, taken together with the finding that slightly fewer than one-half of the parents described their own reaction as being calm when their child misbehaves at home, may reflect greater parental permissiveness towards children's behavior than in the past.

The finding that parents' gender, the number of children in the family, the order of the treated child and previous dental experience were not found to be associated with parents' expressed attitudes toward any of the management techniques in our population, may suggest that the desire for the dental treatment to the children be completed overwhelmed possible differences.

We recognize that our findings were obtained from a selective group of parents. Nevertheless, we were able to track a change in parental attitudes compared with other studies. We recommend that such changes in parental attitudes toward management techniques in the setting of paediatric dentistry be monitored on larger and more heterogeneous populations.

CONCLUSIONS

Parents preferred more positive approaches and management techniques that involve demonstrations geared for the child's level of understanding. Restraint and voice control were more strongly rejected than sedation.

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