

Current techniques for behavior management: a survey^{*}, †

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Abstract

A survey of the Washington State Academy of Pediatric Dentists was performed utilizing a mailed questionnaire. Data were obtained from 34 of 50 pedodontists to whom the questionnaire was mailed. The items on the questionnaire were selected as positive interaction enhancers and thus excluded the use of restraints with the exception of a question on the "hand-over-mouth" technique. This survey was designed to list specific methods of behavior management and to determine the reported use of these methods. A second component of the survey was an assessment of the age group with which dentists used a particular technique. The survey measured also who utilized the various techniques in the dental office: dentist, auxiliary, or both. Finally, the study investigated the relationship between the reported use of some techniques and the pedodontist's having had specialty training and number of years in pedodontic practice.

Introduction

Dentists use a wide variety of techniques in child management. A 1972 study¹ surveyed the use of the following management techniques across several age groupings: parents in the operatory, physical contact (hand or towel over mouth and/or nose²), physical restraint, drugs, analgesia, anesthesia, and hypnosis. Most of these techniques focus on some external way to subdue or restrain the child.

In addition to these techniques, there is a range of interesting activities in which dentists can engage to reduce the need for such control and to promote a good relationship between themselves and their child patients. These techniques may be mentioned in child behavior management articles³⁻⁶ or in casual conversations among colleagues. There is often, however,

inadequate information on the extent and manner in which many techniques are used. Therefore, the present study was developed to address this problem.

Materials and methods

Four components comprised the behavior management-survey. The first attempted to develop and measure the reported use of several specific behavior management methods.

A second component of the survey was an assessment of the age group with which dentists used a particular technique. Some reports have pointed out that different techniques may be used with different age groups.^{7, 8} The previous study also asked dentists with which age ranges they used their techniques. During pretesting, it was determined that dentists who use a technique reported that they did not use it consistently or did not use it with a given age group. Therefore, the present study provided respondents who said they used a technique with the option of saying how frequently they used that technique with each age group on a scale of 1 to 5 (never to always).

A third section of the questionnaire addressed who commonly used the technique: the dentist, his or her auxiliary, or both. This information is provided below also.

Finally, the relationship between the use of a technique and years in pedodontic practice as well as whether or not the pedodontist had specialty training were investigated. Given the increased incorporation of behavior management techniques in dental school curricula,⁹ it was hypothesized that many techniques would be used by those with more recent dental training and by those pedodontists especially who had specialty training in pedodontics.

Data were obtained by mail from 34 questionnaires of 50 pedodontists who are members of the Washington State Academy of Pediatric Dentists (Table 1). The items on the questionnaire were selected by the authors through their own experiences and pretesting interviews with clinical pedodontists. All items in the

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questionnaire are seen as potentially positive interaction enhancers with the exception of the hand-over-mouth technique.

Results and discussion

A number of findings resulted from this study. Statistical analyses were computed on the relationship between the reported use of some techniques and the number of years in pedodontic practice as well as whether the pedodontist had specialty training in pedodontics. Techniques were selected for analysis when sufficient variation of response existed (when 30 to 70% of the respondents reported using a particular technique). The six techniques that were selected were: (1) spending time with the child before the appointment and outside the operatory; (2) teaching the child to relax by breathing in a specific way; (3) offering the child toys to keep before the appointment; (4) using earphones in the operatory; (5) setting short time limits; and (6) having the child point out parts of his or her body. Significant relationships were found between the number of years in practice and spending

Table 1. Training and experience of those responding to survey

Specialty training in pedodontics	
Yes	24
No	9
Missing data	1
Years in pedodontic practice	
Under 5 years	10
5-10 years	5
10-20 years	7
20 years or more	11
Missing data	1
Total years in dentistry	
Under 5 years	2
5-10 years	9
10-20 years	8
20 years or more	14
Missing data	1

Table 2. Behavior management techniques and frequency of use

Technique and percentage of responding pedodontists who report using technique	% of use by whom			Frequency of technique use with age groups on a scale of 1 to 5 (never to always, respectively)						
	Dentist	Auxiliary	Both	Under 1 yr	1 yr	2-3 yr	4-5 yr	6-8 yr	9-11 yr	12+ yr
Bring parent in operatory (88)*	8	4	88	4.75	4.80	3.57	2.33	1.90	1.57	1.47
Spend time with child before appointment and outside operatory (59)	5	40	55	3.47	3.50	4.00	3.60	3.15	2.58	2.32
Model things you want child to do eventually (74)	8	12	80	2.35	2.33	4.00	4.56	4.24	3.44	3.16
Teach child to relax by breathing in specific way (53)	6	0	94	1.59	1.65	2.65	3.29	3.29	2.77	2.65
Discuss sports, clothes, hobbies (97)	9	3	88	1.64	1.72	3.52	4.38	4.56	4.69	4.66
Discuss TV programs (88)	7	10	83	1.13	1.12	2.65	3.67	3.82	3.78	3.74
Offer child toys to keep before appointment (35)	0	18	82	2.00	2.20	3.00	2.60	2.40	1.80	1.00
Offer child toys to keep after appointment (91)	8	23	70	3.38	3.57	4.87	5.00	4.77	4.23	3.69
Let child hold toys or stuffed animals during appointment (91)	3	7	90	4.00	4.00	4.37	3.77	2.83	2.00	1.90
Use alternate words to standard terms (97)	3	3	94	3.54	3.43	4.87	4.90	4.65	4.07	3.63
Hide the fact that the child will get injection or shot (82)	8	4	88	4.14	4.04	4.71	4.58	4.21	3.96	3.79
Use physical contact: touching and stroking child's hand or arm (88)	10	7	83	4.89	4.75	4.93	4.93	4.52	3.86	3.52
Use earphones in operatory (50)	0	19	81	1.64	1.54	3.20	3.47	3.73	3.80	3.87
Use a TV in operatory (26)	0	25	75	1.67	1.67	3.67	3.83	3.67	3.67	3.67
Set short time limits (35)	18	0	82	2.38	2.38	3.56	3.56	3.44	3.00	2.78
Have child point out parts of his or her body (47)	8	0	92	1.85	1.71	3.50	3.15	2.07	1.46	1.39
Go through a tell-show-do procedure (97)	9	6	84	2.14	2.27	4.47	4.56	4.25	3.48	2.00
Use hand-over-mouth technique (88)	88	0	12	1.19	1.19	1.93	2.41	1.77	1.24	1.04

* Numbers in parentheses, percentage rounded off to whole numbers.

time with the child before the appointment and outside the operatory ($t = 3.39$, $df = 31$, $p < 0.01$), teaching the child to relax by breathing in a specific way ($t = 2.07$, $df = 29$, $p < 0.05$), and use of earphones in the operatory ($t = 2.26$, $df = 30$, $p < 0.05$), with those in practice a shorter time performing these techniques more than those who had been in practice longer. A significant relationship between the use of these techniques and whether or not the pedodontist had specialty training was found for only the technique of spending time with the child before the appointment and outside the operatory ($X^2 = 6.332$, $df = 1$, $p < 0.02$).

It would appear, therefore, that those who have received their training more recently are using these techniques more frequently and that there probably is a relationship between specialty training and the use of these techniques, but this relationship is confounded by the number of years that the pedodontist has been in practice. A greater number of subjects would be necessary to assess this relationship fully.

The presentation of the remainder of these findings has been organized around the behavior change principles to which each of these special techniques is related. This organization should accomplish two purposes. First, readers should be able to recognize other specific techniques that may be (or already are) used as applications of these general principles. Second, this organization will present a framework for comments and cautions on the manner in which these principles are applied.

Modeling

A number of studies in the psychology literature have demonstrated the power of modeling in affecting children's behavior.^{10, 11} This technique has been recommended also for use in dentistry and has received some empirical support.¹² Tell-show-do is one specific application of the modeling strategy. Ninety-seven percent of those responding to the questionnaire specified that they utilized tell-show-do. It was reported that this technique is utilized almost always by these pedodontists in the 2- to 8-year-old group and drops off to about half the time in the 9- to 11-year-old group. Since tell-show-do is one specific application of the modeling strategy, it is surprising that only 73% of the respondents reported using modeling. This may indicate a lack of understanding of the term modeling.

Positive reinforcement

Another strategy shown frequently to demonstrate a powerful effect in altering behavior is that of positive reinforcement.^{10, 11} Several writers have recommended the delivery of rewards contingent on appropriate behavior, and certainly, giving toys for good operatory

behaviors would be one application of this technique. Ninety-one percent of those responding indicated that they gave toys following the appointment. Children being treated by this group of practitioners are offered toys more than half the time regardless of their age. This study could not, however, assess the appropriate use of positive reinforcement, and the possibility must be considered that the toys were given following bad behaviors, such as crying in the operatory. If this is the case, dentists may in fact be rewarding such inappropriate behaviors. Dentists should be aware of this possible phenomenon and should try to use positive reinforcement in its most effective form to encourage appropriate behavior. Alternately, dentists should recognize also that toys can be used as positive reinforcement for being in the dental office. The behavior being reinforced here is being a patient.

Source familiarity and attraction

Both the interpersonal psychology and behavior therapy literature recommend also that people whom an individual associates already with familiar and pleasant characteristics are likely to take on a positive valence themselves and have greater influence on that particular individual.^{10, 11, 13, 14} This information would support having parents, toys, or earphones with favored music present in the operatory. It also would support the use of age-appropriate words, positive physical contact, and the spending of time with the child outside the operatory. All these strategies should enhance the child's feelings that the operatory is a familiar and positive environment.

The use of alternate words occurred more than half the time even in the under-2-year-old age group. The frequency of the technique obtained the maximum in this group in the 2- to 8-year-olds, similar to the pattern in tell-show-do. It does, however, not drop off as much as tell-show-do in the 9- to 12-year-olds. This demonstrates a trend for the continued use of alternate words for dental patients regardless of their age. This may be due to clinicians' obtaining a consistent clinical demeanor that does not begin to alter to incorporate the words a child will hear as an adult dental patient.

Several other findings also emerged in this category. Ninety-one percent of the pedodontists who responded to the questionnaire indicated that they allow children to hold a toy or stuffed animal during the appointment. Eighty-eight percent of the respondents to the questionnaire noted that they allow parents in the operatory during the child's appointment. Of those who utilize this technique, it is predominantly utilized for infants and children 3 years of age and under. Eighty-eight percent of those responding indicated that they utilized physical contact during the appointment as a technique for behavior management. For those practitioners, it appears to be a technique that is utilized

extensively from infancy to the age of 6 to 8. Fifty-nine percent of the respondents indicated that they or their auxiliaries spend time with the child before the appointment. Fifty percent of the responding dentists indicated that they utilized earphones during appointments with children. With the advent of more efficient and relatively less expensive electronic equipment, this last technique may be used even more frequently in the future. Offering the child toys to keep before the appointment was among the techniques used with a relatively low frequency (only by 35% of the respondents).

While nearly all of the techniques that were utilized were reported as used by both the dentist and his or her auxiliary three-fourths of the time, most of the exceptions to this rule do emerge in this category of techniques designed to enhance feelings of familiarity and pleasantness. Spending time with the child before the appointment and delivering toys after the appointment appear to fall to the auxiliary about 43 and 23% of the time, respectively. Offering children toys to keep before the appointment is another technique used often by auxiliaries alone (18%). All of these have in common the out-of-operatory characteristic. Two other techniques used frequently by auxiliaries alone are the television and earphones. This may mean simply that dentists allow auxiliaries to manage this "auxiliary" equipment. Given the discussion above concerning the desirable effects of associating positive stimuli with the dentist and dental procedures, however, this may indicate that auxiliaries rather than dentists themselves will take on these reinforcing qualities. As the dentist is often the direct contact person, this decision may not be wise, and studies will need to test the effects of this action.

Punishment

Several studies in the psychology literature demonstrate that punishment should be a technique of last resort as it has several negative consequences.¹⁰ While it creates an immediate change in the desired direction, these effects are often short-lived. Rather than staying in a punishing situation and maintaining desirable behaviors, people often learn to avoid punishers. Translated into the dental situation, we might find that punishment techniques, such as hand-over-mouth, may alleviate immediate problems, but they may create a long-term desire to avoid the dentist. Eighty-eight percent of the respondents indicated that they utilized the hand-over-mouth technique. The peak frequency of use is relatively low, however, and between the ages of 2 to 5. Given the relatively low frequency of use of this method, clinicians may have very specific situations where this technique is used, such as when the child is very much out of control. Dental students who are taught this method should

be taught its contraindications, learning to discriminate those infrequent situations where it might be appropriate. The hand-over-the-mouth technique is reported also as being used most of the time by dentists alone rather than by auxiliaries. This may be a result of professional training or some particularly extreme reactions to procedures conducted only by dentists.

Elimination of fear

Children, as most other people, often try to avoid something they fear.¹⁰ Crying and fighting treatment procedures are some examples of typical avoidance behaviors in the operatory. Modeling, mentioned above, has been recommended also as one method to eliminate fear.¹² Breathing exercises also have been shown to address this problem specifically by attempting to eliminate a key physiological component of fear.¹⁵ Therefore, it is encouraging that 53% of those responding indicated that they use breathing exercises to assist in relaxing the child. The removal of a stimulus associated with fear is another way to address this problem.¹⁰ One specific application of this strategy is used by a large number of subjects. Eighty-two percent of the respondents indicated that they hide the syringe from the patient.

Conclusions

In general, it appears that a large number of these techniques are used by many of our respondents. Newer pedodontists seem to use these techniques more than do their experienced colleagues. We see this survey as merely a beginning in the compilation of information of this kind, and we hope other practitioners will share further information on helpful strategies. We also recognize that while many of these techniques have been derived from proven principles in the psychology literature, they have not been systematically and empirically tested in the dental operatory. Future research should address this need by measuring the effects of these techniques with different patient age groups.

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