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A comparison of opinions from parents of disabled and non-disabled children on behavior management techniques used in dentistry

The purposes of this study were to compare the acceptance of pediatric dental behavioral management techniques by 40 parents of children with disabilities with that of 40 parents whose children were not disabled and to determine the effect of prior information on the level of acceptance for both groups of parents. An instrument containing a demographic questionnaire and using a visual analog scale asked parents to indicate acceptance level of hand-over-mouth, sedation, restraint using Papoose board, and general anesthesia for either a check-up/cleaning, dental filling, or treatment of a toothache. One half of each parent group received a written description and rationale for the behavior management technique prior to rating acceptance, and the other half did not. Although differences were found between parents of the disabled and non-disabled and between those informed and not informed, only one technique and procedure (restraint for check-up/cleaning) was significantly different for acceptability ($p < 0.05$), and that was between uninformed parents of non-disabled children and informed parents of disabled children. We conclude that having a disabled child or receiving a prior rationale for pediatric behavior management techniques was not significantly related to differences in acceptance of the techniques for the procedures described.

The movement of the disabled population into the mainstream of society brings with it legal, ethical, and social change, and dentistry has seen evidence of this in such areas as restraint and standards or guidelines on behavior, sedation, and general anesthesia.^{1,2} Dentists have expressed concern about their confidence and ability to care for patients who are disabled,³ citing lack of knowledge and other system issues. The behavior of persons who are physically, mentally, or intellectually challenged can be one clinical problem for dentists that determines whether or not these patients will be treated. The literature on dentistry and the disabled contains a bounty of empirical clinical advice, policies, and techniques,^{5,7} but little information from systematic investigation on issues of behavior management like patient and parental preference or informed consent.

The pediatric dental literature, on the other hand, has reported extensively on the social issues surrounding behavior management of children. A number of reports have described parental opinion regarding the use of techniques such as hand-over-mouth, restraint, sedation, and general anesthesia for their own children and children in general.^{8,9} This same body of literature has addressed the influence of income, gender, and social status on parental opinion about traditional management techniques.^{10,11} The research methodologies have also varied, using videotapes, group and individual reporting, and use of interviewers in order

to determine the effects of these variables on parental preference.¹²

Because a review of the dental literature indicated no reports of parental attitudes toward traditional behavior management for disabled children, and because a well-developed and widely accepted approach to assessment of attitudes is now available, this study was undertaken. Its purposes were to investigate and compare the attitudes of parents of disabled and non-disabled children toward traditional pediatric dental behavior management techniques and to determine whether prior written explanation had an effect on those attitudes.

Methods and materials

Sample selection

The 80 participants in this institutionally approved study were 40 parents who reported that their children were not physically or mentally disabled and another 40 parents who reported at least one child with a physical or mental disability. Parents were recruited from families seeking care at a university-based facility for the disabled, a private pediatric dental practice, and a hospital-based clinic for the developmentally disabled, all in Columbus, Ohio. Subjects were recruited without regard to income, gender, or ethnicity, and selection continued until 40 participants were obtained for each of the two comparison groups: Group 1 had parents who had no child who was disabled, and Group 2 had parents who had at least one disabled child.

Table 1. Distribution of demographic characteristics by cohort grouping+ of subjects.

Characteristic	Group 1A		Group 1B		Group 2A		Group 2B		p#
	Yes	No	Yes	No	Yes	No	Yes	No	
Gender									
Male	18		19		18		19		0.89
Female	1		2		2		1		
Site									
Private Office	10		10				4		0.001
University-based					7		10		
Hospital-based	9		11		13		6		
Marital Status									
Married	14		19		16		16		0.36
Divorced							2		
Single	2				2				
Separated	2		2		2		1		
Widowed	1						1		
Socio-economic Status'									
High	1		8		3		1		0.08
Medium High	12		7		7		6		
Middle	1		1		2		4		
Middle Low	3		2		2		3		
Low	2		3		6		6		
Handicap Condition									
Mental	NA		NA		5		10		0.001
Physical					4		6		
Mental/Physical					10		4		
Previous Experience									
H-O-M	3	15	3	17	2	16	4	12	0.74
Restraint	3	16	2	19	4	15	7	11	0.13
General Anesthesia	2	17	3	18	5	14	4	15	0.58
Sedation	4	13	6	15	9	10	6	12	0.45

+ Group 1A (n = 19) Parents without a disabled child, not informed
 Group 1B (n = 21) Parents without a disabled child, informed
 Group 2A (n = 20) Parents with a disabled child, not informed
 Group 2B (n = 20) Parents with a disabled child, informed

' According to Hollingshead's classification: Hollingshead AB. Four-factor index of social status. Yale University Department of Sociology, New Haven, CT. Working Paper. pp. 1-24, 1975.

#Chi-square analysis used to determine significance, p = 0.05 level.

Instrument

This study used a demographic questionnaire that asked for gender, age, marital status, socio-economic status, whether or not any child was disabled with physical, mental, or a combination of conditions, and parents' previous experience with each behavioral technique with any of their children. The specific type of disability was not solicited, and parents were simply asked whether the child had a disability that was physical, mental, or a combination of the two. Other demographic data on education and siblings were collected but were not analyzed and will not be reported.

A second instrument was used to obtain parental opinion regarding their acceptance of four widely used behavior management techniques: hand-over-mouth, passive restraint (Papoose board), sedation, and general anesthesia. Parents were asked to indicate for each of three common dental procedures-cleaning and check-up, dental fillings, or treatment of a toothache-how acceptable each of the four behavior management techniques would be for their own child.

A visual analog scale (VAS) was used to indicate parental acceptance of each technique for each of the three dental procedures. The scale consisted of a 100-millimeter horizontal line anchored on the left side by the word 'acceptable' and on the right by 'unacceptable,' and parents were asked to indicate their level of acceptance by making a vertical line through the scale. By measuring the mark, from left to right, each parental response was given a numerical score. The mid-point (50 mm) was considered neutrality or ambivalence about a technique. The scale was used in previous investigations,^{10,11} and the descriptive rationales of the behavior management techniques were piloted and then modified for understanding.

Procedure

Potential participants were approached by staff of the facilities

and given a letter describing the study and, if they consented, were given a packet containing (1) the demographic questionnaire and (2) one of two differing instruments describing the behavior techniques. The instruments differed only in that

one contained a rationale or reason for the use of a particular behavior technique to inform parents before they rated, and the other instrument did not. This variation was used to determine the effect prior information would have on parental acceptance.

Data analysis

The inclusion of both parental groups (disabled and non-disabled) and two distinct instruments (with and without informing rationale) permitted the formation of four separate cohorts for analysis, as follows:

- Group 1A: parents of non-disabled, not informed
- Group 1B: parents of non-disabled, informed
- Group 2A: parents of disabled, not informed
- Group 2B: parents of disabled, informed,

which were used for data analysis and comparison. Data were analyzed on computer using descriptive statistics, repeated-measures ANOVA, correlation coefficient, and non-parametric tests. The principal investigator (DAB) performed all measurements of the VAS instrument and recorded results.

Results

Sample characteristics

Parents ranged in age from 22 to 71 years, with a mean age of 38.8 years. Table 1 depicts the four cohorts according to characteristics obtained from the demographic portion of the questionnaire. Females outnumbered males 74 (92.5%) to 6 (7.5%). Most parents were married (65/81.3%). All socio-economic strata were represented, but the majority were in the high (13/16.3%) and middle-high (32/40.0%) categories. The hospital-based developmental clinic accounted for most of the participants

Table 2. VAS scores, in millimeters, of cohort groupings+ for behavior management techniques for dental check-up/cleaning, dental filling, and treatment for a toothache.

Cohort Group	H-O-M Mean±SD	Restraint Mean±SD	Sedation Mean±SD	General Mean±SD
Check-up /Cleaning				
Group 1A	52.7 ± 31.9	63.6 ± 31.7*	49.2 ± 39.0	66.7 ± 36.6
Group 1B	30.3 ± 31.4	51.2 ± 35.1	51.3 ± 30.6	62.6 ± 34.4
Group 2A	50.7 ± 33.2	41.4 ± 37.0	45.7 ± 38.7	58.4 ± 41.2
Group 2B	32.5 ± 33.6	32.2 ± 28.9*	42.3 ± 34.8	58.6 ± 35.8
Dental Filling				
Group 1A	48.5 ± 30.6	58.2 ± 32.8	34.0 ± 29.8	57.7 ± 39.7
Group 1B	31.2 ± 31.7	43.7 ± 37.6	26.6 ± 26.8	44.8 ± 39.3
Group 2A	49.5 ± 33.4	34.8 ± 32.9	29.0 ± 30.0	49.6 ± 43.4
Group 2B	33.0 ± 33.0	30.7 ± 29.3	31.3 ± 30.4	41.4 ± 33.9
Toothache				
Group 1A	49.8 ± 31.2	58.5 ± 32.9	31.1 ± 32.4	57.4 ± 38.7
Group 1B	41.7 ± 33.8	45.5 ± 40.0	30.4 ± 32.4	43.4 ± 39.2
Group 2A	50.8 ± 34.6	33.0 ± 32.5	31.2 ± 32.2	50.1 ± 42.6
Group 2B	39.1 ± 33.3	36.2 ± 33.7	27.9 ± 28.8	44.0 ± 37.1

- + Group 1A (n = 19) Parents without a disabled child, not informed
- Group 1B (n = 21) Parents without a disabled child, informed
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- Statistically significant difference, p = 0.02, independent t test

(39/ 48.8%), followed, in decreasing order, by the private office and the university-based facility.

All parents had had previous experience with at least one of the four techniques used in the study, regardless of their child's disability status. Those cohorts with disabled children tended to have had more parents with experience compared with those who did not have disabled children. A chi-square analysis showed no differences between the four cohorts for gender, marital status, socio-economic status, or previous experience (p = 0.05) but did find that the differences in site and type of handicapping condition were significant.

Comparison of attitudes toward behavior techniques

The similarity of cohorts according to the above characteristics permitted further analysis according to that breakdown. Table 2 is a depiction of the cohort VAS scores for the four behavior management techniques in the three dental treatment scenarios tested. The VAS scores below 50 mm suggest that a technique is acceptable to a parent, and the lower the score, the more acceptable. The converse is true. No attempt was made to group scores according to specific categories such as "more acceptable" or "less acceptable."

Mean scores ranged from 26.6 to

66.7, but raw scores ranged from 1 to 100. All scores were associated with large standard deviations, suggesting a high variability within the sample for any technique and dental situation. The only significant difference noted was between those parents without a disabled child who were not informed (Group 1A) and those with a disabled child who were informed (Group 2B) for use of restraint for a check-up/cleaning. In this case, Group 1A found the technique unacceptable, while Group 2B found it acceptable.

Some patterns were detectable in the data, although differences did not reach significance. Providing a rationale seemed to improve the acceptability of behavior management techniques for the three dental procedures for both disabled and non-disabled parent groups, with several exceptions. Group 2 parents (disabled) rated general anesthesia less acceptable after receiving information for cleaning/check-up; they had similar changes for sedation and a dental filling and restraint for a toothache. Group 1 parents rated sedation less acceptable for a check-up/cleaning after being informed.

Restraint and general anesthesia seemed to be the techniques that evoked the strongest response of unacceptability among parents who had no disabled children. Sedation, interestingly, enjoyed acceptability in all but one dental scenario, and that was for parents of disabled children for a check-up/cleaning who had been informed (Group 2B).

Parental attitudes toward hand-over-mouth hovered around neutrality, based on mean scores, but the scores showed some of the largest change toward acceptability when information was provided. Scores for both parental groups were very similar, both uninformed and informed.

Discussion

The purpose of this study was twofold: (1) to determine the differences in acceptance of four behavior management techniques by parents of disabled and non-disabled children, and (2) to determine the effect on the

acceptance of the techniques of providing a rationale for three dental procedures. Previous studies have addressed parental attitudes and acceptance and the effect of prior information on acceptability.^{8,10,13} However, none addresses parents who have children who are disabled.

This study found that parents of disabled children were no different statistically from parents of non-disabled children in their acceptance of techniques, with the exception of the use of restraint for a simple procedure of dental check-up/cleaning. Parents whose children were not disabled were not accepting of this procedure, while those with disabled children were. This singular difference may be explained by the fact that many health providers caring for the disabled use restraint, or that parents of disabled children understand the need for restraint in specific situations. This finding is interesting in view of recent litigation and policy-making regarding the use of restraints.¹

Another interesting finding of this study is that information on the rationale for a technique did not always improve acceptance. In several cases, the informed group was less accepting than the uninformed group, suggesting that the more the parents knew about the technique, the less they wanted it used for their child. Havelka¹⁰ and Lawrence¹¹ both found that explanation improved acceptance of techniques by parents, but also noted exceptions. A major difference between their studies and this one is in our use of a written rather than videotaped portrayal of the techniques. Both Havelka and Lawrence used videotapes to give parents information and rationale for the behavior techniques. The lesson from their work and this present study is that simply providing an explanation may not be enough to sway a parent to accept a procedure or may, in some cases, have the effect of dissuading parents from consenting. Clinicians obtaining informed consent should be aware that providing a rationale may serve the opposite, but equally desirable, function of

focusing feelings and thus help prevent parental disgruntlement about a technique.

The limitations of the methodology of this study may account for some findings. The initial contact was made by the facility staff, and the parents completed the forms alone. The study also used brief written rationales which may not have explained techniques adequately. Most previous work reported here used videotapes, so results may not be comparable. Previous work with this methodology suggests that personal contact and explanation with an interviewer may alter parental attitudes.¹¹ No one was available to answer questions or expand upon the rationales, and it isn't known how many parents didn't understand the techniques or procedures. Parents, although counseled otherwise, may have responded in a certain way for fear that their child's treatment in that facility would be affected. Finally, the VAS, while providing a continuous rating, also does not force responses into specific categories of acceptance. A Likert-type scale might have yielded different results.

Additional points that should be made are that our methodology made no attempt to specify the type or severity of the disabling condition, the age of the child, or the child's previous dental experiences with or without the studied behavioral techniques. The focus of our study was on the presence or absence of a disabling condition and the effect on acceptability. It is very possible that differences in the above variables may have affected the parents' acceptance of a technique, either positively or negatively. Our methodology also lacked the sensitivity to identify developmental delays or pending diagnoses, and parents were not queried extensively to rule out existence of these or major medical illnesses in either the disabled or non-disabled group.

Two points should not escape readers. The first is that while many techniques were found to be acceptable, almost all means were accompanied by large standard deviations.

The raw data provided a full range of responses, and in some cases, the distributions of responses were bimodal rather than normal. Clearly, parental attitudes are variable and often formidable. Clinicians should approach the issue of informed consent for behavior management aware that the use of these techniques may be accompanied by strong feelings. Prediction of response may be difficult.

Second, the results of the study suggest that while parents of disabled children were no different statistically from parents of non-disabled children in terms of their acceptance, they tended to be slightly more accepting of techniques, overall, as evidenced by mean scores. As a group, these parents may have more willingness to use techniques to accomplish needed care, perhaps because of their experience working with other providers or therapists or their own approaches to functioning in daily life with a disabled child. Clinicians should take the opportunity to inquire about how parents manage analogous situations in other aspects of the child's life and use parental experiences and attitudes to facilitate their own use of behavior management techniques to care for these children.

The Americans with Disabilities

Act¹⁴ and changes in societal norms are bringing more and more disabled children into the mainstream of life. Issues of informed consent for care require that clinicians be aware of parental attitudes and concerns regarding all aspects of dental care, including behavior management.

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