
The Papoose Board® and mothers' attitudes following its use

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Abstract

Seventy-four mothers were surveyed to determine their attitudes toward the use of a Papoose Board® (PB, Olympic Medical Corporation, Seattle, WA) to treat their uncooperative children (mean age 3.1 years). If, at the initial exam, it was agreed that the PB might be an acceptable treatment modality, the child was prescribed a sedative for the next appointment. At that appointment, the child was placed in the PB and teeth were restored using local anesthetic, mouth prop, and/or nitrous oxide. Afterward, each mother received a survey to complete at home and mail back anonymously. Seventy-four surveys were issued; 59 were mailed back. Of the 59, 50 were answered comprehensively; nine were incomplete. Of the 50 surveys, 90% of the mothers approved of the use of the PB, 96% thought the PB was necessary to perform the dentistry, 78% did not think it had a later negative effect on the child, and 86% were willing to use it with their next child. (Pediatr Dent 13:284-88, 1991)

Introduction

Children often do not cooperate in the dental chair. Even a simple visual exam may raise the child's anxiety, and some children cry or fight. Various techniques enable the dentist to perform dental treatment on the uncooperative child, and at the same time reduce anxiety and elicit the child's cooperation. Sedation, tell-show-do, voice control, and positive reinforcement can reduce the child's anxiety, and obtain cooperation (Williams and Clark 1976). However, these techniques may not work with all children, particularly younger children.

When dentistry is imperative, but anxiety-reducing techniques such as tell-show-do, voice control, behavior modification, or positive reinforcement are not effective, physical restraint may be required.

According to a survey conducted by the Association of Pedodontic Diplomates (Bowers and Hubbard 1972), 37% of the respondents used body restraints for patient management. A later survey of the members of the American Academy of Pedodontics (Starkey et al. 1981) indicated that 86% of 1142 respondents used physical restraints. Body restraints accounted for 56% of the restraining methods. A recent study by Nathan (1989) involved 616 responses from Diplomates of the American Board of Pediatric Dentistry and non-Diplomates. Fifty-three per cent reported they preferred restraint to a sedative (other than nitrous oxide) when doing a simple restoration on a 3-year-old.

Body restraints remain in current use as a behavior management technique. The Papoose Board® (PB, Olympic Medical Corporation, Seattle, WA) is an effective way to manage uncooperative children, but research reports that the majority of parents view it negatively. Fields (1988), summarizing and updating a series of reports (Fields et al. 1984; Murphy et al. 1984) on a study originally conducted in 1984, concluded that

the PB was rated the behavior management technique least acceptable to parents.

While Fields' study soliciting parents' attitudes toward the PB was negative, the PB remains in popular use (Bowers and Hubbard 1972; Starkey et al. 1981; Nathan 1989). The present study was designed to determine mothers' attitudes regarding the use of the PB on their children.

Materials and Methods

Sample

This study was conducted with mothers of children in a suburban pediatric dental practice in a midsized Midwest city. Subjects were drawn from Caucasian, Asian-American, and African-American families of all socioeconomic levels. Candidates for the study were mothers of uncooperative children who were treated with the PB. Their children had to be healthy at the time of treatment, and children with histories of allergies or asthma were not treated unless they were asymptomatic. None of the children had debilitating diseases or were mentally handicapped.

Procedure

Recruitment Procedures

At the initial appointment, various nonphysical management techniques were used to elicit cooperation. In every instance, the child cooperated enough to be examined; carious teeth were charted, and treatment recommendations were made. The consequences were discussed with mothers who opted not to have their children treated. Three options were presented to mothers who chose treatment.

The first option was to have the child treated under general anesthesia in the hospital. The second option

was treatment in the dental office. The child would be sedated with chloral hydrate (25 mg/kg) and promethazine, which might be supplemented with nitrous oxide. If the child cooperated at that time, then a local anesthetic and mouth prop might be used, and no further behavior management would be needed. If this did not produce a cooperative child, a third option was to wrap the child in the PB while the dental procedures were being performed. A local anesthetic would be injected and a mouth prop and/or nitrous oxide might be used.

If the mother accepted either of the last two options, she gave consent. The mothers sampled were parents of children who required management with option 3.

Operative Procedures

At the second appointment, the sedated but uncooperative child was shown the PB and an Indian game was played as the child was being wrapped. Later, if nitrous oxide was needed, an astronaut game was devised. The mother and the assistant placed the child on the PB, verbally supporting the child. The child was allowed to cry without dental staff or parent displaying anger. The child was wrapped comfortably, with one hand free to hold the mother's hand. The mother was required to be present during the visit to comfort and support the child, and aid in decision making for the child's well-being. A mouth prop was used on children who did not keep their mouths open. A topical anesthetic was applied and a local anesthetic was administered. While the anesthesia, and sometimes nitrous oxide, was taking effect, the mother was assured that much of the crying was out of fear. Tell-show-do was used to help allay fear.

When the planned treatment was completed, the child was released and given appropriate rewards. The mother was given postoperative instructions, and also was issued the survey to take home and mail back anonymously.

Survey Instrument

The survey consisted of two sections. The first section requested demographic information. The second section requested the mother's perception of the child's experience in the PB, and solicited maternal opinions about the procedure and other treatment alternatives.

Results

Seventy-four children received dentistry with the PB. Their mothers were issued the survey to complete. Of those 74 surveys, 59 were mailed back for a response rate of 80%. The 59 mothers who returned the survey comprised the sample for this study.

Demographic Data

The profile of mothers is summarized in Table 1. The mean age of mothers was 29.7 years and of their children, 3.1 years. Of the 40 mothers who listed an occupation, almost half (19) were in mainly nonprofessional jobs, the other half (21) worked in the home. Only five mothers in this sample had not completed high school.

Table 1. Demographic characteristics of respondents

<i>Characteristics</i>	<i># of respondents</i>	<i>%</i>
Age of mother		
20 - 24	10	17.0
25 - 29	20	33.8
30 - 34	14	23.7
35 - 39	7	11.9
40 +	4	6.8
Unanswered	4	6.8
Age of child		
Under 2	6	10.2
2	14	23.7
3	22	37.3
4	8	13.6
5 and older	4	6.8
Unanswered	5	9.4
Gender of child		
Male	38	64.4
Female	18	30.5
Unanswered	3	5.1
Occupation of mother		
Housewife	20	33.9
Office worker	16	27.1
Factory worker	2	3.4
Student	3	5.0
Miscellaneous	9	15.3
Not answered	9	15.3
Education of mother		
Less than high school	5	8.5
High School graduate	34	51.6
Some college	13	22.0
College graduate	5	8.5

n = 59

Mother's Attitude Toward Use of Papoose Board

Of the 59 respondents, 50 answered the "agree or disagree with use" question. Table 2 (see next page) summarizes their answers. As noted in Table 2, 90% of respondents agreed or strongly agreed with the statement, "It was really necessary to prevent my child from hurting him/herself." Ninety-six per cent agreed or

strongly agreed with the statement, "It was very helpful and necessary to do the dentistry." Even though 66% of the mothers endorsed the statement, "It was stressful for my child," 96% thought the dentistry was necessary. Sixty per cent of the mothers did not think their children became more afraid (i.e., disagreed or strongly disagreed with the statement, "My child became more afraid."). Seventy-eight per cent did not think there was a later negative effect when they disagreed or strongly disagreed with the statement, "It had a negative effect later...". Only 16% of the mothers thought their children were not made more comfortable, and 10% thought there was a later negative effect.

Mother's Perception of Child's Reaction to Papoose Board

The questionnaire asked about the mother's attitude about the child's physical and psychological comfort in the PB. Mothers were asked to check yes or no to six questions, and these results are reported in Table 3. The mothers then were asked to comment on the reasons for their choices in questions 1 through 4. The findings reported in Table 3 and a sample of comments illustrating mothers' attitudes toward use of the PB are presented below.

Question 1 examined whether the mother thought the child remembered being in the PB. Thirteen mothers (22%) responded that their children remembered the experience; most mothers believed that their children had no memory of it. Comments indicated that those who remembered had negative feelings, i.e., "didn't like that thing," and "didn't like being tied."

Question 2 addressed the issue of mothers holding their children's hands during the operative procedure. Ninety-three per cent of mothers felt that handholding was a good idea. Thirty-five mothers felt

it gave the child security, 12 mothers felt "useful" holding their child's hand, 13 said it communicated love, and 12 felt it comforted the child.

In response to Question 3, 92% of the mothers thought that they should be with their children during treatment. Twenty mothers thought the child felt more secure, 16 felt their child needed love/comfort, four wanted to be in the room so that the child wouldn't feel abandoned, and two felt they would be useful to the child during the experience.

Question 4 asked if general anesthesia in the hospital was a better alternative. Ten mothers answered "yes."

Table 2. Mothers' attitude toward the use of the Papoose Board (N = 50)

Question	Number of respondents (percentage) for each choice					Mean Answer
	(1) Strongly Agree	(2) Agree	(3) Disagree	(4) Strongly Disagree	No Answer	
1. It was stressful for my child.	12 (24%)	21 (42%)	13 (26%)	3 (6%)	1 (2%)	2.1
2. It was really necessary to prevent my child from hurting him/herself.	25 (50)	20 (40)	4 (8)	0 (0)	1 (2)	1.5
3. It was very helpful and necessary to do the dentistry.	31 (62)	17 (34)	2 (4)	0 (0)	0 (0)	1.4
4. My child was made comfortable.	11 (22)	29 (58)	8 (16)	4 (8)	0 (0)	1.9
5. My child became more afraid.	9 (18)	11 (22)	26 (52)	4 (8)	0 (0)	2.6
6. It had a negative effect later (ex. became more fearful to go to physician; sleep problems; etc.)	1 (2%)	4 (8%)	22 (44%)	17 (34%)	6 (12%)	3.6

Table 3. Mother's perception of child's relationship to the Papoose Board

Question	Number of respondents (percentage)		
	Yes	No	Ambivalent
1. Does your child remember or refer to being in the Papoose Board?	13 (22%)	41 (69%)	5 (9%)
2. Your child's left hand was free for you to hold. Is this a good idea?	55 (93)	4 (7)	0 (0)
3. Do you think the parent should be in the room during the treatment?	54 (92)	2 (3)	3 (5)
4. Do you think dentistry in the hospital using a general anesthetic in the operating room is a better alternative?	10 (17)	42 (71)	7 (12)
5. Do you think just seating your child in the dental chair and holding him/her there would have been successful?	6 (10)	51 (86)	2 (4)
6. Would you be willing to have your next child treated in the Papoose Board?	51 (86%)	6 (10%)	2 (4%)

N = 59

Four felt there would be less stress on the child, and three felt there would be less stress on the mother. Seventy-one per cent answered "no" to the use of general anesthesia in the hospital. Eight felt the child would be more fearful in the hospital, six said there would be an unnecessary risk to the child, six cited general anesthesia as over-treatment, and four said it was too expensive.

Question 5 sought mothers' opinions about the possible success of using the alternative behavior management technique of holding the child in the chair physically during dental procedures. Eighty-six per cent of the mothers felt that this would be unsuccessful.

For Question 6, 86% of the mothers would be willing to have their next child treated in the PB.

There were two open-ended questions on the questionnaire. The first asked mothers why they thought their children cried. Only 17% of the mothers felt it was the restraint itself that caused the children to cry. The majority of the mothers (75%) felt their children cried because of fright, and did not relate it to the restraint.

The second open-ended question asked mothers for suggestions for treating 1- and 2-year-olds in the chair. They felt that the PB might not have to be used if the staff wore costumes, used puppets extensively, and gave the children headphones, or if the children were sedated more heavily.

Discussion

Mothers responding to the survey reported mainly positive opinions toward the use of the PB for their children's dentistry. Even though 66% of the mothers indicated that using a PB was stressful for their child, 96% said it was necessary. The mothers appear to have a strongly positive opinion toward the use of the PB as is demonstrated by the following statistics:

- 90% realized that immobilizing their children protected the children from harming themselves
- 70% felt that their children were comfortable
- 60% did not rate their children more afraid
- 68% did not report a later negative effect
- 86% would be willing to have their next child treated with the PB.

These results differ from past studies and suggest that parental attitudes can be influenced by the way that proposed dental behavior management procedures are presented. The 59 mothers who responded to the survey had treatment involving the PB explained to them in a manner that led them to agree to its use. The responses of the mothers themselves provide some clues as to why this positive attitude developed. Presence of parents in the operatory seems to be well-

documented (Troutman 1988), and mothers responded that they felt it important to be with their children. One mother mentioned the need for her "tender loving care" in the operatory. Two others suggested that games they played with their children were helpful, and almost all (56) mothers appreciated being able to hold their child's hand. Encouraging the mother's presence during the dentistry helped both mother and child face a difficult experience.

The actual presentation of the use of the PB was performed in accordance with currently acceptable procedures, such as good communication (Nathan and Nichelsen 1986), and modeling (Levy and Domoto 1979; Wing 1989). The actions of the dental staff, who behaved in a warm and caring manner, established a good atmosphere for the mother. Communication with mothers about their children's welfare and the dental procedures was constant throughout the entire visit. 'Mother' is the third important leg of the dental triangle, Mother/Child/Dentist (Wright et al. 1987). By explaining benefits and risks of the procedures, mothers were included in the decision making process and felt that they were an important part of the dental visit. Allowing mothers to hold their children's hands provided nonverbal communication, which was important for both mothers and children. It is possible that indirect communication took place during the Indian game. The game could have reminded mothers of the papoose board used by native Americans, and conceivably influenced their acceptance of the PB.

It is possible that the above procedures had a positive influence on most mothers, leading to the approval of the PB. As noted above, the acceptance of the PB by the majority of mothers in this study is contradicted by other studies (Fields et al. 1984; Murphy et al. 1984; Fields 1988). The reason for this discrepancy may lie in the way the PB was introduced. In Fields' original 1984 study, parents were shown videos using the PB and other behavior management techniques. They rated the PB the least desirable behavior management technique, based on their imagined attitudes for a child they did not know. In the present study, mothers had personal experience with their own children in the PB before stating their attitudes toward its use.

The sample of this study represents a population of mothers who chose to have their children's dental treatment performed using the PB under the particular conditions described in the procedure section. Results of this study may apply only to this population. Further research also should be conducted to see how mothers who do not choose the PB after they receive careful explanations of its benefits and risks differ from this sample.

The fact that the mothers in this sample had positive attitudes toward the use of the PB after experiencing its use with their children should be vital information to the practicing pediatric dentist.

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