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An updated survey on the utilization of hand over mouth (HOM) and restraint in postdoctoral pediatric dental education

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Abstract

A survey of directors of advanced educational programs in pediatric dentistry, identical to one conducted in 1979, was undertaken to examine the utilization of and indications for various physical restraint techniques. Updated results indicated that there is still a high acceptance of the hand-over-mouth (HOM) technique. Only 11.1% of programs never use the technique. However, the acceptance of airway restriction is significantly lower than in 1979. Program directors currently report increased situations in which other physical restraint techniques, such as the Papoose Board®, are recommended.

Despite the continued acceptance of physical restraint techniques, a significant number of directors report that they are less certain that these techniques do not induce psychological problems.

Although the current survey data indicates that there may be a discrepancy between professional standards as espoused by program directors, and material standards, that discrepancy is greatest for those program directors with tenures in excess of 10 years. These directors were much more likely to believe that HOM was indicated in situations other than for the control of hysterical and tantrum-like behavior and were much less likely to tell the child why HOM was being used. Additionally, such directors were as likely to use airway restriction as were 1979 respondents, although directors with tenures of less than 10 years were significantly less likely to use airway restriction.

Introduction

Davis and Rombom (1979) reported on the utilization of and rationale for hand-over-mouth and restraint in postdoctoral pedodontic education. Many articles in the literature have addressed the various issues involving the use of restraint in the pediatric population (Williams and Clark 1976; Levy 1979; Rombom 1981; Fenton et al. 1987).

The hand-over-mouth exercise (HOM) and the hand-over-mouth with airway restricted technique (HOMAR) have historically been, to varying degrees, accepted techniques used in the management of children exhibiting negative or maladaptive behavior (Association of Pedodontic Diplomates 1972, 1981). The indications and contraindications for these techniques have been well outlined (Craig 1971; Levitas 1974). It has generally been stated that HOM has positive long-term benefits for the child/dentist relationship (Chambers 1970).

Bowers (1982) reviewed the legality of HOM in child behavior management and noted that although there had yet been no litigation concerning the use of HOM or HOMAR, there were several areas of concern for pediatric dentists. Issues were raised concerning informed consent, the potential for committing battery and professional acceptance of the techniques. Although HOM may have clinical relevance, Bowers questioned the appropriateness of the HOMAR technique, from both a psychological/behavior management perspective and from a legal perspective. A behavior management tool that may be considered as unduly harsh or punishing, was discussed as a possible reason for the lower acceptance of HOMAR by pediatric dentists. The same reasoning presumably could be used in court, where judicial condemnation would not be spared, even in light of professional acceptance. In fact, Schuman (1987a, 1987b) reported several instances in which dentists recently had been charged with child abuse or criminal assault following routine dental procedures. HOM was singled out by the Virginia Board of Dentistry as a procedure leading to the report of child abuse against dentists (1987).

Davis and Rombom's findings suggested that HOM and restraint were widely accepted among the leaders of postdoctoral education. Almost 90% of the directors reported teaching such techniques. It was inferred by the authors that since no simple alternative management techniques were widely known, there would be resultant widespread use of the techniques within the private sector. This sentiment was consistent with a

practitioner survey of management techniques (American Academy of Pedodontics 1972). The authors concluded that respondents generally structured their teaching of HOM after the guidelines of Craig (1971) and Levitas (1974) and strongly believed that the use of restraint techniques induced no adverse psychological problems among child patients. Davis and Rombom presented an explanation, based on contemporary psychological theory, to explain the generally held belief that only positive results occur following the use of restraint techniques. Although not specifically discussed in their article, the survey results indicated that only 30% of the respondents taught the use of HOMAR.

The purpose of this article is to update the Davis and Rombom survey, evaluating the results with respect to changing material and professional standards of behavior and patient care.

Materials and Methods

A brief survey was mailed to the directors of all accredited advanced pediatric dentistry training programs in the continental United States. The survey was virtually identical to the one distributed by Davis and Rombom. Only the choices to the initial question differed, since textbooks not available in 1979 were included.

Follow-up surveys were mailed to directors who did not respond to the initial mailing. The collected data then were compared to the 1979 survey results. Data were reported as the per cent of positive responses. Where multiple responses were possible, the totals exceeded 100%. Chi-square analysis was performed on all of the data generated in order to ascertain significant changes in the use of or rationale for restraint in pediatric dentistry.

Data also were analyzed on the basis of the program director's length of tenure. The responses of those directors having a tenure in excess of 10 years, consistent with time passage since the previous survey, were compared to both all other current respondents and the 1979 group. Likewise, respondents with tenures at their current institutions of 10 years or less, were compared to the 1979 database.

Results

Fifty-four of 56 program directors (96.4%) responded to the current survey. In 1979, only 36 of 62 program directors (58.0) replied. This difference was significant ($P < 0.001$). The average length of tenure for current directors was 8.2 years. Sixteen (28.6%) had held their positions for more than 10 years.

Recommended Pediatric Dental Textbooks

Only 9.3% (N=5) of the respondents reported recommending Finn's textbook. This is in contrast to 75.0% (N = 27) who recommended the text in 1979 ($P < 0.001$).

In 1979, only 36.1% (N = 13) of respondents recommended Wright's textbook on behavior management, while 70.4% (N = 38) currently recommended it ($P < 0.005$, Table 1).

Situations in Which HOM is Employed

There were no significant differences reported in the recommended situations for the use of HOM (Table 2). Of the current respondents, 79.6% (N=43) reported using HOM for control of hysterical or tantrum-like behavior; 83.3% (N=30) of the 1979 respondents reported such use.

Description of the Technique as Recommended

In 1979, significantly more program directors reported that the technique, as recommended, included covering the mouth and nose (Table 3, next page). In the present survey, only 11.1% of the program directors reported teaching of an airway restriction technique ($P < 0.05$).

TABLE 1. Recommended Pediatric Dental Textbooks

	1979 (%)	*1989 (%)*	*1989 >10 Years (%)*	*1989 <11 Years (%)*
McDonald and Avery	30 (83.3)	41 (76.0)	11 (68.8)	30 (78.9)
Finn	27 (75.0)	5 (9.3)*	2 (12.5)++	3 (7.8)††
Wright	13 (36.1)	38 (70.4)**	12 (75.0)+	26 (68.4)†
Stewart et al.	N/A	36 (66.7)	12 (75.0)	24 (63.2)
Pinkham et al.	N/A	21 (38.9)	5 (31.3)	16 (42.1)
Davis et al	N/A	17 (31.5)	7 (43.8)	10 (26.3)
Other	N/A	16 (29.6)	6 (37.5)	10 (26.3)

* $P < 0.001$ 1989 vs. 1979.
** $P < 0.005$ 1989 vs. 1979.
† $P < 0.025$ < 11 years vs. 1979.
†† $P < 0.001$ < 11 years vs. 1979.
\+ $P < 0.05$ > 10 years vs. 1979.
\+ + $P < 0.001$ > 10 years vs. 1979.

TABLE 2. Situations in Which HOM is Employed

	1979 (%)	*1989 (%)*	*1989 >10 Years (%)*	*1989 <11 Years (%)*
Hysterical, tantrum behavior	30 (83.3)	43 (79.6)	10 (62.5)*	33 (86.8)
Never used	4 (11.1)	6 (11.1)	3 (18.8)	3 (7.8)
Other	2 (5.6)	5 (9.3)	3 (18.8)	2 (5.3)

* $P < 0.05$ > 10 years vs. < 11 years.

TABLE 3. Description of the Technique as Recommended

	1979 (%)	1989 (%)	1989 >10 Years (%)	1989 <11 Years (%)
Cover the mouth only	25 (69.4)	45 (83.3)	12 (75.0)	33 (86.8)
Cover mouth and nose	11 (30.6)	6 (11.1)*	3 (18.8)	3 (7.8)†
Inform child of why hand is used and expected behavior	24 (66.7)	43 (79.6)	10 (62.5)+	33 (86.8)†
Give verbal directions only regarding expected behavior	11 (30.6)	11 (20.4)	6 (37.5)	5 (13.2)
Give no verbal directions regarding expected behavior	1 (2.8)	0 (0.0)	0 (0.0)	0 (0.0)

* $P < 0.05$ 1979 vs. 1989.
+ $P < 0.05$ > 10 years vs. < 11 years.
† $P < 0.05$ < 11 years vs. 1979.

TABLE 4. Situations in which Physical Restraint is Recommended

	1979 (%)	1989 (%)	1989 >10 Years (%)	1989 <11 Years (%)
Certain handicapped patients	24 (66.7)	51 (94.4)*	14 (87.5)	37 (97.4)†
Very young patients	19 (52.8)	46 (85.2)*	13 (81.2)	33 (86.8)†
Premedicated patients	11 (30.6)	49 (90.7)**	12 (75.0)+	37 (97.4)††
Physically resistive patients	10 (27.8)	38 (70.4)**	12 (75.0)++	26 (68.4)†

* $P < 0.005$ 1979 vs. 1989.
** $P < 0.001$ 1979 vs. 1989.
+ $P < 0.01$ > 10 years vs. 1979.
++ $P < 0.005$ > 10 years vs. 1979.
† $P < 0.005$ <11 years vs. 1979.
†† $P < 0.001$ <11 years vs. 1979.

TABLE 5. Psychological Problems Induced by Restraint

	1979 (%)	1989 (%)	1989 >10 Years (%)	1989 <11 Years (%)
None anticipated – high certainty	22 (61.1)	21 (38.9)*	8 (50.0)	13 (34.4)†
None anticipated – may, however, exist	20 (55.6)	28 (51.8)	6 (37.5)	22 (57.8)
Fear of dentistry	3 (8.3)	5 (9.3)	2 (12.5)	3 (7.8)
Other	2 (5.6)	1 (1.9)	0 (0.0)	0 (0.0)

* $P < 0.05$ 1979 vs. 1989.
† $P < 0.05$ <11 years vs. 1979.

Situations When Restraint Techniques are Recommended

Current program directors were significantly more likely to recommend restraint techniques for patients in all the categories outlined by Davis and Rombom (Table 4).

Psychological Problems Induced by Restraint Techniques

Significantly fewer program directors in the current survey were highly certain that there were no such problems induced ($P < 0.05$, Table 5).

Psychology Courses Taught to Postdoctoral Candidates

Significantly more programs currently include child or developmental psychology as part of a general psychology course, than in 1979 ($P < 0.05$). There was, however, no difference in the overall proportion of programs with some coursework in child psychology, either as a separate course or integrated with a general psychology course. In 1979, only 19.4% (N = 7) of program directors reported that their postdoctoral students received no coursework in child or developmental psychology, compared with 13.0% (N = 7) in the 1989 sample.

Director's Length of Tenure

When HOM was used, compared to those respondents in the current survey with tenures in excess of 10 years, the more senior directors were significantly more likely to believe that HOM should be used in situations other than the control of hysterical or tantrum-like behavior ($P < 0.05$, Table 2).

Also, these senior directors were significantly less likely to inform the child of why the HOM technique was being used ($P < 0.05$, Table 3).

When compared to the entire 1979 cohort, respondents with tenures in excess of 10 years are no more likely to use HOM for handicapped or very young patients, but are significantly more likely to use restraint techniques on premedicated and physically resistive patients (Table 4). Additionally, such directors were as likely to use HOMAR as were the 1979 respondents.

Comparison between directors with tenures of less than 10 years and the 1979 sample indicates that they are significantly less likely to use HOMAR, but are significantly more likely to recommend the use of other restraints, such as the Papoose Board® (Olympic Medical Corp., Seattle, WA), in specific situations. Directors with less than 10 years tenure are also significantly more likely to inform the child of why the hand is used and what behavior is expected of the child. Such directors report less cer-

tainty that restraint techniques induce no psychological problems (Table 5).

Discussion

The heightened interest in the science of behavior management is reflected by the increased use of Wright's textbook. Although readily available in 1979, it is recommended much more often by the current respondents. Additionally, only 13.0% of all programs do not currently offer course work in child or developmental psychology.

The role of physical restraint in the arsenal of behavior management tools has long been accepted professionally, yet there is some uneasiness, as evidenced by periodic professional introspection. Such introspection may result from Academy-supported surveys, changing societal norms for professional behavior, and the experiences of the individual.

Surveys examining the use of behavioral management techniques are generally aimed at a specific audience — the entire membership, Diplomates, or program directors. Presumably, each of these groups provides different perspectives and insights into the forces that govern professional standards.

The general membership offers the broadest and most eclectic viewpoint and best demonstrates the pervasiveness of various techniques. Diplomates offer the opportunity to discover which techniques are used by individuals whose clinical experience and skills have been recognized as meeting the highest standards of the specialty. Finally, program directors are charged with the responsibility of educating future specialists and are expected to be knowledgeable about issues germane to the practice of the specialty. Presumably, graduating postdoctoral students will carry with them the philosophies and standards espoused by their program directors.

However, the standards espoused by these three groups may, in fact, be at odds with the standards of the community. The "reasonable patient," and "materiality standard" have in recent years been displacing the professional community standard in courts that have addressed the issue (Fields et al. 1984; Hagan et al. 1984; Murphy et al. 1984), both indicate that in a specific community, implied consent should not be assumed for individual behavioral techniques.

Given the potential for continuing changes in the public's acceptance of specific techniques, the updated Davis and Rombom survey should be re-evaluated on the basis of whether program directors have been responding to external demands and expectations.

The vast majority of postdoctoral programs continue to teach HOM. Only 11.1% report never using the technique. An increased percentage report using the techniques as originally described — covering the mouth only and informing the child of why the technique is being used and what behavior is expected of the child (Craig 1971, Levitas 1974). However, directors with tenures in excess of 10 years were significantly less likely to inform the child of why the hand was used. Although significantly fewer programs currently report using the HOMAR technique, directors who have tenures in excess of 10 years exhibited no difference in their usage rate of HOMAR, when compared to 1979 respondents.

Despite the controversy surrounding the use of HOM and HOMAR, program directors reported a significant increase in the acceptance of other physical restraint techniques in the management of patients. In 1979, program directors were significantly less likely to recommend the Papoose Board® to restrain patients. Since both HOM and the Papoose Board® were judged as unacceptable by parents (Fields et al. 1984; Murphy et al. 1984), the currently reported increase is unexpected and appears not to be consistent with material standards. It is conceivable that the increased acceptance of physical restraints in specific situations may be in response to the diminished willingness to perform conscious or deep sedation.

Of particular interest is the changing conviction with which program directors have accepted the nature of physical restraints to be benign. Significantly fewer of the current program directors believe, with high certainty, that such techniques induce no psychological problems. The decrease in conviction may be a harbinger of changing patterns of use within postdoctoral programs. Although there is no significant increase in the number who believe that such problems may exist, change often comes not in discrete actions, but rather as a continuum. The loss of conviction may lead to increased uncertainty, and ultimately to changes in philosophy and new professional standards of care.

Analysis based on length of tenure reveals a response pattern by directors with tenures in excess of 10 years that differs from the remaining directors. In part, such directors have shown changes in their responses since 1979. However, in other instances, they remain no different from the 1979 cohort, despite significant differences between the 1979 and 1989 groups. The presumption that program directors guide the philosophy of trainees based on the most currently accepted tenets of the profession and society may not be entirely warranted.

Compared to those directors with tenures less than 11 years, senior directors are less likely to recommend the use of HOM as originally described and intended. They are significantly less likely to believe that HOM is indicated for the control of hysterical or tantrum-like behavior.

Inherent in the judicious use of HOM is the need to analyze the type of maladaptive behavior being exhibited and whether the child is communicative; can the child process the dentist's words. Without verbal communication including the dentist's actions and anticipated responses, HOM may be construed as unduly harsh or punishing. In fact, although Fields et al. 1984 described the lack of parental acceptance of HOM, there was no indication that parents viewing videotapes demonstrating the various techniques had received sufficient information on the techniques themselves, including the appropriate indications and contraindications. It is possible, that with explanation, the various techniques would have been more palatable to the parents.

Appropriate information also is vital to the child. Certainly, the intent of HOM is to gain the attention of the child and to achieve a sustained level of cooperation, without the use of threats or punishment. The ultimate goal of behavior management may be attained even without this cooperation, but then question must be raised about the cost to the patient/doctor relationship, and the quality of information passed from child to parent.

Interestingly, senior program directors do show changes in their acceptance of situations in which physical restraint is recommended. However, their increased acceptance is not as universal as that of the remainder of the 1989 cohort. Senior directors did not indicate increased use for certain handicapped patients or very young patients, but were significantly more likely to recommend restraint for premedicated and physically resistive patients. Given the questionable acceptance of physical restraint by parents, it is not clear whether the changes exhibited by the more senior directors is due to partially meeting the demands of society, partially following the steps of other program directors, or partially in response to the diminishing acceptance of sedation, particularly deep sedation, and the concomitant need to increase the use of restraint techniques.

Finally, senior directors were as likely to use HOMAR as were 1979 respondents. Despite the significant decrease in utilization of airway restriction between 1979 and 1989, there continued to be "hold-outs." Although a lower acceptance rate of HOMAR was clearly established by 1979, and Bowers questioned its legitimacy from legal and psychological perspectives, a small number of adherents continue to use this technique. The continued acceptance of such techniques, by these directors is consistent with their continued certainty that such aversive techniques are without psychological sequelae.

Conclusions

Comparison of survey results over a 10-year period indicates that post-doctoral program directors report:

1. Increased use of behavior management textbooks
2. Increased exposure to child and developmental psychology courses
3. Decreased use of HOMAR
4. Decreased certainty that restraint techniques are without psychological sequelae
5. Broadening criteria for the use of physical restraint devices
6. Broader criteria for acceptance of HOM and HOMAR by directors with tenures in excess of 10 years.

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