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Attitudes towards the use of hand over mouth (HOM) and physical restraint amongst paediatric specialist practitioners in the UK

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Summary. *Purpose.* To assess the views of paediatric specialist dental practitioners in the United Kingdom of the use of the hand over mouth technique and physical restraint.

Methods. Questionnaire survey of all specialist dental practitioners in paediatric dentistry in the United Kingdom ($n = 216$). Replies were received from 179 individuals (82·8%).

Results. The majority of the sample (over 80%) described HOM as having three components, broadly mirroring the description of the technique in clinical textbooks. Approximately 60% of the respondents reported that HOM should never be used (106 individuals, 59·2%). Those who endorsed the use of HOM suggested it should be used with cases of hysterical, tantrum behaviour (57 respondents, 32%). The use of physical restraint was endorsed for certain disabled patients by 110 individuals (62%); for very young patients by 69 respondents (39%); premedicated patients by 35 respondents (20%); physically resistive patients by 25 respondents (14%). Forty-three respondents (24%) felt there were no psychological consequences of the use of HOM or physical restraint; 91 (51%) felt that HOM would result in the child fearing dental treatment.

Conclusions. Specialist paediatric dental practitioners in the UK are familiar with the technique of HOM although they also feel that this technique should never be used. A large proportion of practitioners felt that the use of physical restraint was appropriate with certain disabled patients. The most commonly anticipated psychological sequeala which may accompany the use of these techniques was subsequent fear of dental treatment.

Introduction

In 1988 the American Academy of Pediatric Dentistry published and widely circulated guidelines on the use of techniques of behaviour management for children in dental settings [1]. The guidelines have been revised a number of times, most recently in 2002 [2]. The use of hand over mouth (HOM) was included in these guidelines as a tool for use with children who are able to communicate but who show defiant or non-cooperative behaviour [3,4]. HOM was defined as follows:

'... an accepted technique for intercepting and managing demonstrably unsuitable behaviour that cannot be modified by Basic Behaviour Management techniques.... When indicated, a hand is gently placed over the child's mouth, and behavioural expectations are calmly explained. Maintenance of a patent airway is mandatory. Upon the child's demonstration of self control and more suitable

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behaviour, the hand is removed and the child is given positive reinforcement'.

AAPD (2)

The use of HOM and other methods of physical restraint have attracted much discussion in the dental literature. Both advocates and opponents have written extensively. Peretz & Gluck [5] provide a review of the use of restraint strategies in paediatric dentistry and conclude that the use of such strategies remains controversial. A number of surveys have been conducted exploring the use of restraint by dental practitioners. In America, 53% of dentists preferred the use of restraint to sedation in the treatment of a 3-year-old child with dental caries. However significant variation in response was found according to the characteristics of the area in which the dentist worked (prevalence of caries, sociodemographic make up) and the educational background of the dentist [6]. Specialist paediatric dental practitioners were significantly more likely to use restraint of some form (71%) compared to general practitioners, amongst whom 3% reported that they would use restraint [7]. Similarly, in Australia [8,9], use of aversive techniques varied according to the age of the dentist and the dental school from which they had graduated. Only one previous study has addressed the views of United Kingdom practitioners regarding the use of restraint. Crossley & Joshi [10] found that only 2% of UK specialist paediatric specialist felt comfortable with the use of HOM, and only 2% felt comfortable with the use of the Papoose Board.

Discussion has also focused on the long-term consequences of the use of restraint and it's legality as a technique for behaviour control. While de Jongh [11] notes that the majority of dental phobics who were interviewed about the origins of their dental phobia remembered a traumatic event related to experiencing pain or restraint or both in childhood, a follow up study of children who had been treated using the HOM technique found no difference in anxiety levels between those adults and a control group who had not been treated using restraint [12]. A number of legal challenges to the use of restraint have been levelled. Firstly, it has been asked whether a dentist can disregard the child's very clearly expressed refusal of treatment. Age is a factor in this consideration. Secondly, if restraint is used, then the healthcare practitioner must be convinced that the benefits outweigh the burdens of the restraint. The exact burdens of restraint are unclear and often constitute a subjective judgement of the practitioner which as we have seen varies according to the characteristics of the practitioner and his or her practice. However in considering the question of benefits *versus* burdens the practitioner, the patient and their carers must consider the urgency of treatment and the safety of the restraint.

A series of surveys carried out between 1979 and 2001 suggested a decline in the acceptance of the use of HOM and its variant HOMAR (Hand Over Mouth with Airway Restriction) as well as physical restraint amongst directors of educational directors of advanced programmes in paediatric dentistry in the United States [13–15].

In contrast, parental acceptance of the use of HOM has generally been low and might be hypothesized to relate to the declining use of HOM and physical restraint amongst dental practitioners. Murphy, Fields & Machen [16] assessed the attitudes of parents toward 10 different behaviour management techniques employed in paediatric dentistry. Parents ranked the acceptability of the techniques relative to each other. Parents found tell-show-do, positive reinforcement, voice control and mouth props most acceptable. Physical restraint by either dentist or assistant was viewed significantly more favourably than sedation and HOM. The least acceptable techniques were general anaesthesia and Papoose Board. Using the same methodology but additionally providing information on the nature of the dental treatment to be performed, Fields, Machen & Murphy [17] found that while the acceptability of behaviour management techniques was generally related to the nature of the treatment performed, this was not the case for HOM and physical restraint. Whereas voice control, mouth props, positive reinforcement, and tell-show-do are acceptable for nearly all procedures, the use of the Papoose Board and HOM were unacceptable to the majority of parents for all dental procedures. Acceptance of behavioural management techniques including HOM has been found to be improved by the provision of appropriate information [18].

The aim of the present study is to determine the attitudes of UK specialist paediatric dental practitioners towards the HOM technique and the use of physical restraint.

Methods

A postal survey of all dental practitioners listed as specialists in paediatric dentistry on the General

Dental Council register ($n = 216$) was carried out. The survey was conducted in two stages, with non-respondents to the initial mailing sent a reminder letter and a further copy of the questionnaire two months after the initial mailing.

The questionnaire was based on the tool described by Acs *et al.* [14] and Acs *et al.* [15]. The questionnaire comprised the following sections:

- Description of the technique: Respondents were presented with three pairs of statements (see Table 1), and asked to indicate which statement in each pair was true of the HOM technique.
- Situations in which HOM is employed: respondents were asked to indicate from a list of situations which were indications for the use of HOM (see, Table 2). Respondents were permitted to indicate more than one situation.
- Situations in which physical restraint should be used: respondents were asked to indicate from a range of four options situations in which physical restraint should be used, see Table 3 (examples of physical restraint techniques were given as follows: the Papoose Board, the Pediwrap or holding the child's arms).
- The psychological sequelae of the technique: respondents were asked to indicate what they felt were the likely psychological consequences of the use of HOM. Respondents could indicate more than one consequence (see Table 4).

Results

Replies were received from 179 specialist dental practitioners (82·8%). Of these, 112 were female (63%). This figure is similar to those for all specialist paediatric dental practitioners registered with the GDC (proportion female = 62%) suggesting that the sample is representative of gender.

Description of HOM

Table 1 shows the number and proportion of respondents who endorsed paired statements regarding the HOM technique. The description of the technique endorsed by participants generally mirrors published guidelines on the use of HOM [2–4], that is only the child's mouth is covered, an explanation of the reason for the placing of the hand over the mouth is given and verbal descriptions of the expected behaviour are provided.

Situations in which HOM is employed

Table 2 summarizes the proportion of respondents who reported that the technique should be used (or not used) in certain in situations. By far the largest response was that HOM should never be used.

Table 2. Number and proportion of respondents who endorsed the use (or non-use) of Hand Over Mouth (HOM) in given situations.

HOM should be used:	*n* (%)
In instances of hysterical, tantrum behaviour	57 (32%)
In cases where the child refuses to open their mouth	0
Other situations	0
HOM should never be used	106 (59%)

NB: 16 respondents (9%) felt unable to answer this question because they had not received training in the use of HOM.

Table 1. Number and proportion of respondents who endorsed paired statements regarding the hand over mouth (HOM) technique. Respondents were asked to indicate which statement of each pair was a true description of HOM.

	Statement Pairs		*n* (%)
(a)	The child's mouth is covered		150 (84%)
	OR		
	The child's mouth and nose are covered		12 (7%)
		No response given	17 (9%)
(b)	The child is informed why the hand is being used		157 (88%)
	OR		
	The child is not informed why the hand is being used		6 (3%)
		No response given	16 (9%)
(c)	The child is given verbal directions regarding the expected behaviour		159 (89%)
	OR		
	The child is not given verbal directions regarding the expected behaviour		4 (2%)
		No response given	16 (9%)

Approximately one third suggested that HOM could be used in cases of disruptive behaviour.

Situations in which physical restraint techniques should be employed

Table 3 lists the situations in which respondents felt that physical restraint techniques should be used. The use of physical restraint was endorsed more commonly than the use of HOM, particularly for individuals with handicaps. In answering this question, 17 individuals added comments indicating that they felt only physical restraint by holding the child was acceptable, not the use of Papoose Board or Pediwrap.

The psychological sequelae of the HOM and physical technique

The respondents' views of the likely psychological consequences of the use of HOM are summarized in Table 4. Note that respondents were permitted to suggest more than one consequence of the use of HOM and therefore percentages do not sum to 100. Approximately one-quarter of the respondents were certain or fairly certain that there were no psychological consequences of the use of HOM or physical restraint. Approximately one-half felt that the child would subsequently fear dental treatment, and 28% reported other likely consequences. No clear pattern of responses emerged in the category of other consequences – the two most commonly listed consequences were lack of trust in the dentist-patient relationship and possible litigation.

Table 3. Number and proportion of respondents who endorsed the use (or non-use) of techniques involving physical restraint in given situations.

Physical restraint techniques (for example the Papoose Board, the Pediwrap or holding the child's arms) should be used for:	*n* (%)
Certain handicapped patients	110 (62%)
Very young patients	69 (39%)
Pre-medicated patients	35 (20%)
Physically resistive patients	25 (14%)

NB: respondents were permitted to indicate more than one category and therefore totals do not sum to 100%.

Table 4. Number and proportion of respondents who indicated that listed consequences were likely to arise as a result of the use of Hand Over Mouth (HOM) or physical restraint.

What lasting psychological problems for you feel may be induced by the use of HOM or restraint:	*n* (%)
I am sure there are none	9 (5%)
I am fairly certain there are none	34 (19%)
The child will come to fear dental treatment	91 (51%)
Other problems may arise	50 (28%)

NB: respondents were permitted to indicate more than one category and therefore totals do not sum to 100%.

Discussion

The majority of specialist paediatric dental practitioners in the UK were able to describe accurately the technique of HOM although they also felt that this technique should not be used. In contrast, a large proportion of practitioners felt that the use of physical restraint was appropriate with certain handicapped patients, however, it should be noted that this does not necessarily indicate that the clinicians surveyed used these techniques for all or even most of these patients. The survey asked simply whether clinicians felt restraint might be appropriate for certain groups of patients. The decision to use the technique would be related to the particular patient, their treatment need and other characteristics of the particular situation. The most commonly anticipated psychological sequela which may accompany the use of these techniques was subsequent fear of dental treatment.

The findings of this survey confirm and extend those of Crossley & Joshi [10]. Very few UK practitioners feel that the use of HOM or the Papoose Board is appropriate. The reasons for this appear to be concern regarding the long-term consequences of the use of restraint. The use of physical restraint is seen to be appropriate for individuals with certain forms of disability, which in itself is a controversial finding. Connick *et al.* [19] suggested that restraint should be used for specific populations including people with developmental disabilities or mental retardation and older people. However this is entirely contradictory to considerations of the social validation of treatments for groups of individuals with special needs [20].

The use of HOM has always been controversial and there is some suggestion of longstanding differences between US and UK practitioners. There may be several reasons for the unpopularity of HOM and physical restraint techniques in the UK, including concerns about medico-legal issues, parental concerns and changes in both undergraduate and postgraduate teaching. The Children's Act and European legislation enshrining the rights of the child have

forced consideration of restraint and punishment in many settings including healthcare. As previously outlined, parental attitudes towards the use of HOM and physical restraint are generally negative [16,17]. Given the increasing emphasis on the involvement of consumers in healthcare, practitioners are likely to use such information in treatment planning [21]. The extent to which the use of HOM and physical restraint are taught as part of undergraduate and postgraduate curricula in paediatric dentistry is unknown although neither technique is mentioned in the GDC document 'The First Five Years' [22].

Acs *et al.* [15] report a significant decrease in the number of advanced educational programmes in paediatric dentistry in the United States which are currently teaching the use of HOM, and of those who do report teaching HOM, the technique they teach places emphasis on encouraging communication with the child during HOM. This survey finds that only a small minority of paediatric dentists in the UK endorse the use of HOM. United Kingdom specialist practitioners in child dental health express concern about the use of HOM, and envisage the technique as having negative psychological consequences. The negative attitude of UK practitioners towards the use of HOM and restraint was reflected in the spontaneous comments which many practitioners attached to their completed questionnaires. Many mentioned that although they had been taught HOM they had never used it, some expressed concern regarding the legality of the use of HOM.

The shortcomings of the research should be acknowledged. The survey deliberately chose to replicate the methodology of Acs *et al.* [14,15] in order to provide comparable data. However a number of difficulties can be identified with the survey instrument. The first question asked participants to choose between paired statements, an open-ended question may have yielded a more variable response to the question and more accurately reflected practitioners' knowledge. As mentioned previously, the wording of the instrument did not clearly distinguish endorsing a technique and using the technique. Participants may have known that a technique could theoretically be used, but would not use it themselves. However against this is the high proportion that felt HOM should never be used. Some of the questions were potentially leading and the response options were limited for some questions (notably for Table 3). Future research should seek to develop this instrument whilst ensuring comparability with previous surveys. The response rate for the study was good and there was some suggestion that the sample was representative in terms of gender distribution. Future studies could explore the views of specialist and non-specialist practitioners throughout Europe.

Conclusions

Only a small number of specialist paediatric dentists in the UK use or endorse HOM as a technique for the control of non-cooperative children.

Résumé. *Objet.* Evaluer les opinions des spécialistes en dentisterie pédiatrique du Royaume-Uni sur l'utilisation de la main sur la bouche (HOM) et de la contrainte physique.
Méthode. Enquête par questionnaire auprès de tous les spécialistes en dentisterie pédiatrique du Royaume-Uni ($N = 216$). Des réponses ont été obtenues de 179 personnes (82,8%).
Résultats. La majorité (plus de 80%) ont décrit la HOM comme ayant 3 composantes, reprenant largement la description de la technique retrouvée dans les livres. Approximativement 60% des répondants ont rapporté que la HOM ne devrait jamais être utilisée (106 personnes, 59,2%). Ceux qui ont souscrit à son utilisation ont suggéré qu'elle devrait être utilisée dans les cas de comportement hystérique et de caprice (57 répondants, 32%). L'utilisation de la contrainte physique e été admise pour certains patients handicapés par 110 personnes (62%); pour les très jeunes patients par 69 répondants (39%); pour les patients prémédiqués par 35 répondants (20%); pour les patients résistant physiquement par 25 répondants (14%). Quarante-quatre répondants (24%) pensaient qu'il n'y avait pas de conséquences psychologique à utiliser la HOM ou la contrainte physique; 91 (51%) pensaient que l'enfant en concevrait une peur des traitements dentaires.
Conclusions. Les spécialistes en dentisterie pédiatrique du Royaume-Uni sont habitués à la technique de HOM bien qu'ils pensent parallèlement que cette technique ne devrait pas être utilisée. Une forte proportion de praticiens pense que la contrainte physique est appropriée pour certains patients handicapés. La peur des traitements dentaires est la séquelle psychologique la plus souvent attendue de l'utilisation de ces techniques.

Zusammenfassung. *Ziele.* Bestimmung der Ansichten der Spezialisten für Kinderzahnheilkunde in

Großbritannien über die Anwendung von hand over mouth (HOM) sowie physischem Zwang.
Methoden. Fragebogen wurden allen Spezialsten für Kinderzahnheilkunde in Großbritannien ($n = 216$) zugesandt. Antworten wurden von 179 erhalten (82.8%).
Ergebnisse. Die Mehrzahl der Antworten beschrieben HOM als aus drei Komponenten bestehend, weitgehend die Beschreibung in Lehrbüchern spiegelnd. Rund 60% gaben an, diese Methode solle nie eingesetzt werden (106 Einzelantworten, 59.2%). Diejenigen, die den Einsatz von HOM unterstützten, gaben als Indikation an hysterisches Verhalten und Wutanfall (57 Antworten, 32%). Die Anwendung von physischem Zwang wurde für bestimmte behinderte Patienten von 110 Respondenten (62%), für sehr junge Patienten von 69 Respondenten (39%), prämedizierte Patienten von 35 Respondenten (20%) und für sich physisch wehrende Patienten von 25 Respondenten befürwortet. Bei 43 Antworten wurden keine psychischen Folgen von physischem Zwang und HOM erwartet, 91 (51%) erwarteten dagegen eine resultierende Angst des Kindes vor Zahnbehandlung-
Schlussfolgerungen. Spezialisten für Kinderzahnheilkunde kennen HOM, wobei viele glauben, diese Methode solle nie eingesetzt werden. Ein großer Teil der Zahnärzte glaubt, dass physischer Zwang angemessen ist bei bestimmten behinderten Patienten. Die am häufigsten antizipierte Folge solcher Behandlungsmethoden ist die nachfolgende Angst vor weiterer Behandlung.

Resumen. *Objetivo.* Valorar los puntos de vista de los odontopediatras en el Reino Unido sobre el uso de la técnica mano sobre boca y la restricción física.
Método. Encuesta cuestionario a todos los odontopediatras en el Reino Unido ($N = 216$). Se recibieron las respuestas de 179 individuos (82,8%).
Resultados. La mayoría de la muestra (sobre el 80%) describió el MSB formado por tres componentes, tal como se describe la técnica en textos clínicos. Aproximadamente el 60% de los que respondieron señalaron que la MSB no debería usarse nunca (106 individuos; 59,2%). Los que aprobaron el uso de MSB sugirieron que debería usarse en casos de histerismo, rabieta (57 respuestas, 32%). El uso de restricción física fue aprobada para ciertos pacientes minusválidos por 110 individuos (62%); para los pacientes muy jóvenes, por 69 encuestados (39%); para los pacientes pre-medicados, 35 encuestados (20%); para los pacientes con resistencia física, 25 encuestados (14%). Hubo 43 encuestados (24%) que pensaban que no se producían consecuencias psicológicas por el uso del MSB o de la restricción física; 91 (51%) pensaron que el niño volvería a tener miedo al tratamiento dental.
Conclusiones. Los odontopediatras en el Reino Unido están familiarizados con la técnica de MSB; sin embargo también creen que esta técnica no debería nunca ser usada. Una gran proporción de profesionales creen que el uso de la restricción física sería apropiada en ciertos pacientes impedidos. La secuela psicológica más comúnmente prevista que podría acompañar al uso de estas técnicas sería el miedo consiguiente al tratamiento dental.

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