

Knowledge, Attitude, and Awareness in Parents on the Use of Physical Restraints during Children's Dental Treatment

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Abstract

Aim: The aim of the study was to assess knowledge, attitude, and awareness of parents on the use of physical restraints (PRs) for their children during dental treatment. **Methods:** This cross-sectional study was conducted among more than 100 parents residing in an urban city, whose children were aged between 4 and 10 years. Data were collected using an interview-administered questionnaire that included open- and closed-ended questions. **Results:** Majority of the parents (61%) encouraged the use of PRs, although maximum number of parents (97%) favored the use of tell-show-do technique over hand-over-mouth exercise. There is good awareness among the parents about bite block (52%) as a PR, whereas the least awareness about papoose board (15%), with the majority preferring holding the child themselves during dental treatment (58%). **Conclusion:** Majority of parents, regardless of their educational status, favors PRs as a behavior management modality, rather than conscious sedation and general anesthesia.

Keywords: Parental attitude, pediatric dentistry, physical restraints

INTRODUCTION

Success in pediatric dental practice depends on operator technical skills, child behavior, and parent's attitude,^[1] and in an ideal "Pedodontic triangle," all parts of triangle should be equal for better delivery of dental care. Behavioral management techniques alter the behavior of children and help to build a relationship between the child, parent, and doctor. At the same time, fear and anxiety provoked by dental visit should be eliminated by building trust and developing a positive attitude toward dental treatment.^[2] The two keywords for any behavior management technique to be successful are "capacity and perception." Children have varying capacities to deal with different situations. Moreover, it is always helpful if we know how children perceive different stressful stimuli in different situations.^[3] There can be varying reactions of children to dental treatment. While some children are relaxed and relatively cooperative, some demonstrate disruptive behavior that makes safe delivery of acceptable dental treatment very difficult for the practitioner without the use of physical restraints (PRs). Hence, a good parent–doctor–patient

communication is very essential as varying number of factors affect the use of PR as a behavior management technique.^[4]

Dentists utilize numerous management techniques to obtain cooperative behavior. Societal and cultural changes influence the attitude of the parents toward different behavior management techniques used by the pediatric dentists. Health professionals no longer can assume that parents are aware and may approve most routine behavior management techniques including PR. In addition, the use and acceptance of PR by the profession do not assure its legality as viewed in today's legal system. With the emphasis on children's physical and mental well-being, the attitude of parents toward behavior management techniques constitutes an important factor which must be considered when selecting an approach for managing behavior.^[5]

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When behavior management techniques such as tell-show-do (TSD), positive reinforcements, and modeling fail, other methods such as PRs/voice control and sedation/general anesthesia may be required. The acceptability of PR will depend on child's needs, type and urgency of treatment, parental acceptance, and laws as laid down by the concerned government.^[6] Hence, the purpose of this study was to assess the knowledge, attitude, and awareness among parents toward the use of PR on children during dental treatment.

MATERIALS AND METHODS

The necessary permission from the Scientific Advisory Committee and Institutional Ethical Committee of the Dental College was obtained. Informed consent was also obtained from the study participants. Before the study, a pilot study was conducted with the help of some parents and teachers of the institute to validate the questionnaire of the study, and the sample size was determined to be up to 100 using single proportion formula and convenience sampling.

Single proportion formula

$$\frac{Z_{\alpha}^2 p(1-p)}{d^2}$$

where $p = 94\%$, $Z_{\alpha} = 1.96$ (constant), and $d = 0.05$ (error).

This cross-sectional study was conducted over a period of 3 months, among the patients residing in a particular urban city, which included (1) parents of children visiting outpatient department (OPD) of the Indian dental college, (2) parents of children visiting OPD of a private hospital in the Indian city, and (3) parents of children living in a residential society of the city. The inclusion criteria were parents of children between 4 and 10 years of age who give consent for the study. The exclusion criteria were children who had not visited a dentist before, subjects not willing to participate in the study, and parents whose children were above or below the age criteria.

Participant's data were collected using an interview administered questionnaire that included open and closed ended questions (Questionnaire 1: Study Pro Forma). The questionnaire began with questions regarding the personal information of the child and his/her parents; the socioeconomic status (determined by Kuppaswamy socioeconomic status scale);^[7] brushing habits; etc. Further, there were questions regarding the reaction of the child while visiting the dentist, cause of fear if any, and preferred behavior management technique in case of uncooperative children. The preformed questionnaire was distributed among parents of children between 4 and 10 years of age. The participants were asked to respond to each item as per the response format provided in the questionnaire. The forms were then collected and checked for completeness. The completed questionnaires were then collected and subjected to statistical analysis and Pearson's Chi-Square analysis was used to analyze the results obtained.

RESULTS

One hundred parents of children between the ages of 4 and 10 years participated in this study. 39% of the parents were graduates, followed by 35% who had passed their 12th standard or below, while 22% were postgraduates and 4% had obtained a PhD. According to the Kuppaswamy socioeconomic status scale, 55% of the participants belonged to higher-middle class families, 31% to lower-middle class families, and 14% were from higher class families.

More than half of the children (52%) brushed their teeth once a day, 56% of children received help during brushing their teeth from their parents, and 77% did not have to be forced to brush their teeth. Majority of the children (96%) had visited dentist before and gave varying reactions on seeing a dentist, viz., anxious (39%), happy (38%), crying (22%), and angry (1%). Approximately equal numbers of children were cooperative and equally uncooperative during dental treatment. Fear of pain was the most commonly cited reason (44%) for uncooperativeness, leading to a frightened cry (28%).

Figure 1 shows that the preferred behavior management modality by parents was TSD technique (97%). Surprisingly, 61% of Indian parents encouraged the use of PRs in case of uncooperative patients and voice control (66%) as a behavior management technique. Figure 2 shows the most preferred alternate behavior management modality if the above techniques are unsuccessful, and regardless of their educational status, most of them favored PRs as a behavior management modality, rather than conscious sedation and general anesthesia. If a PR was to be used, approximately 58% of the parents preferred staying in the dental office and hold their child instead of leaving the dental office and asking the dental assistant to hold the child. In case of the economic status of parents, the majority belonging to the higher-middle class also prefer PRs as well. Figure 3 shows parent's knowledge and awareness regarding various PRs. There is maximum awareness among the parents about bite block (52%) as a PR, whereas the least awareness about papoose board (15%), with

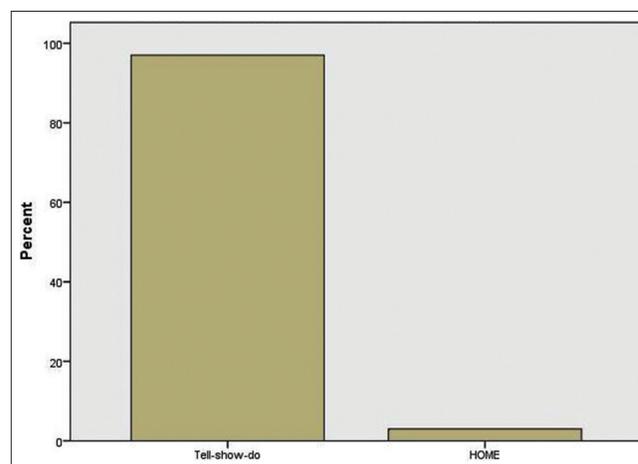


Figure 1: Preferred behavior management modality by parents.

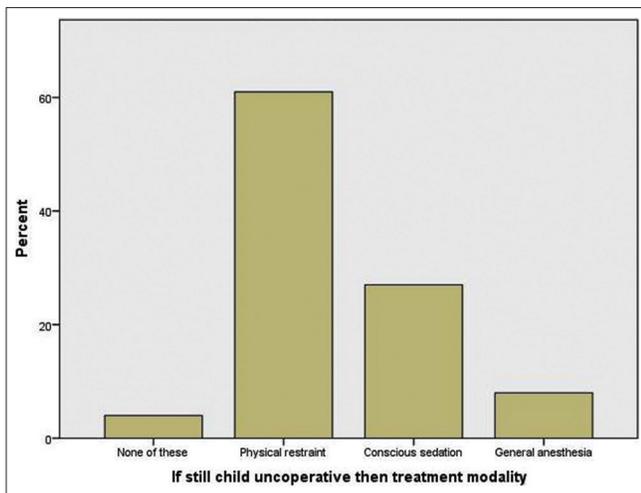


Figure 2: Most preferred alternate behavior management modality by parents.

the majority preferring holding the child themselves during dental treatment (58%). 82% of the parents stated that they had no awareness or knowledge about the various laws governing the use of PRs in dentistry.

DISCUSSION

The selection of behavior management techniques is no longer dentist sole decision. In the past, dentists omitted parents from decisions regarding management of their child’s behavior. Today, the control has shifted from health professional alone to more active involvement of the parents as well.^[8] Social status of the population influenced the results of Murphy *et al.*^[5] and Lawrence *et al.*^[4] on selection of behavior management techniques. Murphy *et al.*^[5] primarily included parents from middle-high social level, whereas Lawrence *et al.*^[4] sampled parents who were primarily from a lower social level. The two important variables that were used in the current study to assess the attitude of Indian parents regarding different behavior management techniques were education of the head of family and socioeconomic status of the family. Majority of the parents involved were graduates and belonged to higher-middle class families (according to the Kuppaswamy socioeconomic status scale).^[7]

The most preferred behavior management modality was found to be TSD and the least being hand-over-mouth exercise (HOME). According to Murphy *et al.*,^[5] the least invasive or aggressive techniques were most acceptable. However, this current study showed conflicting results, i.e., parents preferred the use of PRs, if other behavior management techniques were ineffective.

Techniques employing drugs (i.e., general anesthesia [GA] or sedation) were rated as least acceptable according to Murphy *et al.*^[5] In the current study, the acceptability of these techniques was found to be independent of the education ($P = 0.269$) as well as the economic status of the parents ($P = 0.132$). However, results show that parents from a higher socioeconomic class as

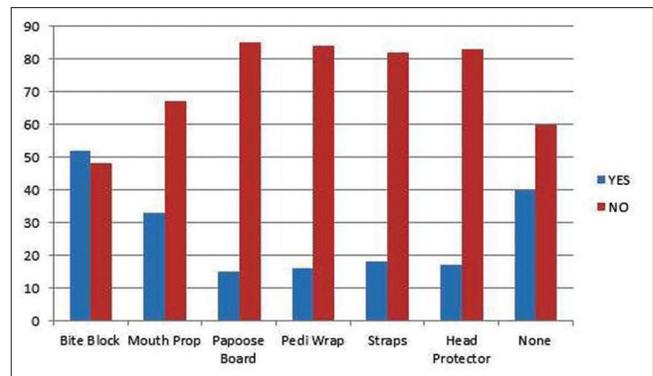


Figure 3: Parents knowledge and awareness regarding various physical restraints.

well as higher educational qualification tend to prefer conscious sedation over other techniques.

In this study, conscious sedation was the second-most accepted technique, similar to another study by Eaton *et al.*, where it was ranked the second-most accepted technique.^[9] In Murphy *et al.*, conscious sedation had the lowest acceptability after GA and papoose board.^[5] In the study Lawrence *et al.* in 1991, this technique had the lowest acceptance among parents as well.^[4] This shows an increase trend in acceptability of conscious sedation compared to other techniques in the past decade, which may be related to increased knowledge and acquaintance of the parents with outpatient treatments under conscious sedation.^[10] The role of the educational ($P = 0.016$) and the socioeconomic ($P = 0.001$) status is significant where the usage of voice control as a behavior management technique is concerned. It is negatively correlated to both the variables probably because parents with higher educational qualifications and higher socioeconomic status are aware of the negative repercussions, of using voice control, on child’s psychological development.

PRs were the most accepted behavior management technique in uncooperative children. Among the various restraints mentioned in the questionnaire, the parents were most aware of the bite block and least aware of the papoose board. Statistical analysis showed that the level of awareness regarding papoose board, straps, and head protectors was significantly correlated when compared with both the variables. Educational status has a significant influence on the awareness of bite blocks, whereas socioeconomic status significantly influenced the awareness of Pedi wraps.

While dentists employ techniques such as positive reinforcement, TSD, voice control, HOME, and PR,^[9,11] based on continued success and professional approval,^[12] little attention has been given to parental attitudes regarding their use. In light of the recent findings,^[5,13] health professionals can no longer assume parental approval for some of the most routine behavior management techniques, no matter how appropriate their use may appear. This oversight now may result in legal liability for the pedodontist. The results of the current study showed that in spite of varying educational qualifications and socioeconomic statuses, there was generalized unawareness

among parents regarding laws governing the use of PRs. Hence, a prudent dental practitioner treating pediatric patients would be well advised to obtain express parental consent for any aspect of treatment that might be considered significant or objectionable to the average parent.

CONCLUSION

Depending on the educational qualification and socioeconomic status of parents,

- The attitude of parents toward use of various behavior management techniques (aggressive and nonaggressive) is different
- The knowledge and awareness of PR vary, and there is unawareness among parents regarding laws governing use of PR
- Majority of Indian parents, regardless of their educational status, favor PR as a behavior management modality, rather than sedation and GA.

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Conflicts of interest

There are no conflicts of interest.

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QUESTIONNAIRE

Questionnaire 1: Study Pro Forma

Personal information:

Name of the child:

Age/Sex:

Education of the head of the family: 12th pass or below Graduate Post-graduate

PHD

Occupation of the head of the family:

Economic status of the family: Lower-middle class Upper-middle class

Higher class

1. Brushing habits:

- Frequency: Once a day/Twice a day
- Do you help your child brush his teeth? YES/NO
- Do you have to forcefully brush your child's teeth? YES/NO

2. Has your child ever visited a dentist before? YES/NO

3. What was your child's reaction on seeing a dentist?



HAPPY

ANXIOUS

CRYING

ANGRY

4. Was your child cooperative during the dental treatment? YES/NO

5. What is the cause of fear in your child while visiting a dentist?

- Fear of pain
- Fear of separation from the parent
- Fear of the unknown

6. What was the type of your child's cry during the dental treatment?

- Obstinate cry (the child is devastated to be in the situation)
- Compensatory cry (it is not really a cry but dull sound that the child makes to drown out other noises)
- Frightened cry (torrent of tears followed by sobs)
- Hurt cry (the child is emotional but does not express it)

7. If your child is being uncooperative, how would you want the dentist to continue the treatment?

- Tell-show-do (the dentist tells the child, shows the instruments, and then does the treatment)
- Hand-over-mouth technique (the dentist puts his hand over the child's mouth and in a stern but whispering voice explains him to remain quiet, till the child calms down)

8. Would you be okay if the dentist uses **Voice control** (stern and strict voice) so that your child listens to the dentist during treatment?? YES/NO

9. If the above techniques are not successful, then how would you want the dentist to continue the treatment?

- Physical restraints (barriers and devices used to restrict the child's movements)
- Conscious sedation (Nitrous oxide and oxygen mixture given by inhalation to the child to reduce anxiety)
- General anesthesia (full-body anesthesia)

10. If physical restraint is to be used.

- Would you hold the child?
- Or would you want the dental assistant to hold the child?

11. If you are okay with physically restraining the child, would you.
 - Stay in the dentist's office?
 - Rather wait in the waiting room?
12. What kinds of physical restraints are you aware about?
 - a. Bite blocks
 - b. Mouth props
 - c. Papoose board
 - d. Pediwrap
 - e. Straps
 - f. Head protector
 - g. None
13. Are you aware of the laws governing the use of physical restraints by the dentist? YES/NO
14. What is your opinion regarding use of physical restraints?
15. What precautions would you want the dentist to take while treating your child??