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Children's Attitudes Toward Dental Behavior Management Techniques in Families with Predominantly Authoritative Parenting: A Cross-Sectional Study

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Abstract

Background:

Children’s acceptance of behavior management techniques is essential for successful pediatric dental treatment. Although parental attitudes and dental anxiety have been widely investigated, the influence of parenting style on children’s own perceptions of these techniques remains unclear. This study aimed to evaluate children’s attitudes toward different behavior management techniques and to investigate whether variations in authoritative parenting scores were associated with children’s acceptance of these techniques.

Methods:

This cross-sectional study included 96 children aged 6–12 years attending a pediatric dentistry department. Children viewed standardized educational videos demonstrating nine Behavior management techniques. Attitudes were assessed using the Line of Favor (LOF) scale, and parenting style was assessed using the Baumrind questionnaire. Descriptive analyses of eight techniques were verified against the available 96-participant SPSS output. Pearson correlations between authoritative parenting scores and LOF scores were examined, and gender associations were assessed using chi-square tests. Statistical findings were interpreted as exploratory.

Results:

Positive reinforcement received the highest proportion of favorable ratings (76/96; 79.2%), whereas passive protective stabilization received the lowest (24/96; 25.0%). In the correlation analyses, weak inverse associations were observed between authoritative parenting scores and children's ratings of modeling ($r = -0.226$, $P = 0.028$), voice control ($r = -0.266$, $P = 0.009$), mouth prop ($r = -0.254$, $P = 0.013$), and active protective stabilization ($r = -0.238$, $P = 0.020$). None of these associations remained statistically significant after Bonferroni correction for nine comparisons.

Conclusion:

Among children from families with a predominant authoritative parenting style, positive reinforcement received the most favorable ratings and passive protective stabilization the least. Weak, exploratory inverse associations were observed between authoritative parenting scores and ratings of selected techniques, but none remained significant after correction for multiple comparisons. Findings should be interpreted cautiously and confirmed in larger, prespecified studies.

Introduction

Dental anxiety and uncooperative behavior remain major challenges in pediatric dentistry, often compromising treatment quality and limiting the delivery of comprehensive dental care. Early dental experiences strongly influence children's future attitudes toward oral healthcare, and negative experiences during childhood may contribute to persistent dental anxiety into adulthood [1, 2]. Consequently, establishing positive dental experiences during childhood is a primary objective of modern pediatric dentistry. Behavior management techniques (BMTs) are fundamental for reducing dental fear, improving cooperation, and facilitating successful treatment. Current guidelines recommend communicative approaches, such as Tell–Show–Do (TSD), positive reinforcement, and modeling, as first-line strategies because they promote trust and minimize anxiety. More advanced techniques, including protective stabilization, sedation, and general anesthesia (GA), may be required for selected patients but are generally less acceptable because they may be perceived as restrictive or intimidating [3]. Children's acceptance of these techniques is an important determinant of treatment success and may influence their future attitudes toward dental care.

Children's responses to dental treatment are influenced by numerous factors, including age, temperament, previous dental experiences, parental anxiety, and family environment [4, 5]. Among these, parenting style has received increasing attention because it shapes children's emotional regulation, coping skills, and reactions to stressful situations. Baumrind classified parenting styles into authoritative, authoritarian, and permissive categories based on parental responsiveness and behavioral control[6, 7]. The 30-item Baumrind Parenting Style Questionnaire, consisting of 10 items for each parenting style, has been translated into Persian, and its validity and reliability have been supported in Iranian populations. Of these, the authoritative parenting style has consistently been associated with better emotional adjustment, greater self-regulation, and more adaptive coping behaviors in children. Previous studies have suggested that authoritative parenting may be associated with more cooperative behavior and lower dental anxiety among children during dental treatment [8]. However, these associations may vary according to children's age, previous dental experiences, and other individual or contextual factors[5, 9]. Parenting practices may also influence children's expectations of dental care through emotional modeling and parent–child interactions.

However, existing studies have primarily focused on children's dental anxiety, treatment behavior, or parents' acceptance of Behavior management techniques rather than children's own perceptions of these techniques[10]. Understanding children's attitudes toward individual Behavior management techniques is clinically important because acceptance of these approaches may influence cooperation before treatment begins and contribute to long-term treatment experiences. Although previous studies have investigated children's and parents' attitudes toward dental Behavior management techniques, further research focusing specifically on children's own evaluations of standardized video demonstrations may provide additional insight into their preferences. A study in Iran using the Baumrind questionnaire reported that authoritative parenting was the predominant style among participating parents. Parents with an authoritative style also showed varying levels of acceptance of different Behavior management techniques, with techniques such as tell-show-do and positive reinforcement

receiving higher attitude scores than more restrictive approaches. Therefore, authoritative parenting has been reported as the predominant style in at least one Iranian pediatric dental sample[11].

The present study addresses this knowledge gap by evaluating children's attitudes toward a range of Behavior management techniques using standardized educational videos and the previously described Line of Favor (LOF) scale. In addition, the study investigates whether variations in authoritative parenting scores are associated with children's acceptance of individual Behavior management techniques. By focusing on children's own perspectives, this study may provide further insight into the potential role of family-related psychosocial characteristics in children's perceptions of Behavior management in pediatric dentistry.

Materials and Methods

This cross-sectional study was conducted at the Department of Pediatric Dentistry, Isfahan University of Medical Sciences, Isfahan, Iran. Children aged 6–12 years attending the department during the study period were assessed for eligibility. Participants were recruited using convenience sampling from children who met the study eligibility criteria. Eligible participants were children aged 6–12 years who were able to understand the video demonstrations and complete the attitude assessment and whose participating parent was classified as having a predominant authoritative parenting style according to the Baumrind Parenting Style Questionnaire. Children who were unable to complete the assessment procedures were excluded. The study was approved by the Research Ethics Committee of Isfahan University of Medical Sciences (approval number: IR.MUI.RESEARCH.REC.1399.090). Written informed consent was obtained from the parents or legal guardians of all participating children, and age-appropriate assent was obtained from the children. Participation was voluntary, and participants could withdraw at any stage without consequences. The study was conducted in accordance with the Declaration of Helsinki and reported in accordance with the STROBE guidelines.

The required sample size was calculated based on an anticipated correlation coefficient ($r = 0.35$) between authoritative parenting scores and children's acceptance of the Tell–Show–Do (TSD) technique, as reported in a previous study [12]. Assuming a type I error rate (α) of 0.01, a type II error rate (β) of 0.20, and a statistical power of 80%, the minimum required sample size was estimated to be 90 participants. A total of 96 children were ultimately included in the study.

The study objectives and methods were explained to the children in an easy-to-understand manner. Children were allowed to ask questions. The study assessment tools consisted of four sections: 1. Educational videos of BMTs, 2. A LOF scale to measure the child's attitude toward BMTs in dentistry, 3. A demographic data checklist, and 4. Baumrind's parenting style questionnaire.

Video Demonstrations of Behavior Management Techniques:

Nine Behavior management techniques were demonstrated using standardized educational videos: Tell–Show–Do, modeling, positive reinforcement, voice control, mouth prop, oral sedation, active protective stabilization, passive protective stabilization, and general anesthesia. Three pediatric dentistry specialists reviewed the videos, and we re-recorded selected demonstrations based on their feedback to improve the accuracy and clarity of the presentations. The total duration of the final video material was approximately 17 minutes.

The nine techniques were organized into three groups according to the nature of the intervention: Group A included positive reinforcement, modeling, and Tell–Show–Do; Group B included voice control and mouth prop; and Group C included active protective stabilization, passive protective stabilization, oral sedation, and general anesthesia. To minimize potential presentation-order effects, six predefined video sequences were developed. For each participant, one sequence was selected using a random number table. All children viewed the same nine dental Behavior management techniques, with the presentation order varying according to the assigned sequence. Before each demonstration, a brief, age-appropriate recorded explanation of the technique was presented. Following each video, children were given 20 seconds to indicate their attitude using the LOF scale.

Positive reinforcement: After the child cooperates with the dentist, the child actor receives verbal praise or a small reward to demonstrate reinforcement of cooperative behavior.

Modeling: The child watches another cooperative child undergoing dental treatment calmly and then imitates the demonstrated behavior.

Tell–Show–Do (TSD): The dentist first explains the procedure in child-friendly language, demonstrates it on the child or a model, and then performs the procedure.

Voice control: The dentist uses a clear, firm, but non-threatening change in tone and volume to gain the child’s attention and guide appropriate behavior.

Mouth prop: A mouth-opening device is shown being placed gently between the teeth to maintain mouth opening when the child has difficulty keeping the mouth open.

Active protective stabilization: The child actor is gently and briefly stabilized by a parent, dentist, or trained assistant to limit disruptive movements while maintaining communication and reassurance.

Passive protective stabilization: A Papose board is demonstrated to restrict movement safely during dental treatment when indicated.

Oral sedation: The child actor is shown drinking a sedative medication prepared in a liquid form before the dental procedure, under appropriate supervision.

General anesthesia (GA): The child actor is shown undergoing intravenous cannulation (IV access) as part of the preparation for GA before the dental procedure.

Line of Favor (LOF) Scale:

Children's attitudes toward each Behavior management technique were assessed using the Line of Favor (LOF) scale, a previously described instrument for evaluating children's preferences regarding dental Behavior management techniques. The scale consisted of a 10-cm horizontal line extending from a fixed starting point. After viewing each video, children were instructed to draw a line from the starting point to indicate how much they liked the demonstrated technique. The length of the line was measured in centimeters to one decimal place, with higher scores indicating more favorable attitudes. (Fig. 1) For descriptive purposes, scores were categorized as negative (0–3.0 cm), neutral (3.1–7.0 cm), or positive (7.1–10.0 cm), consistent with the cutoffs reported by Talaat[13]. Each technique was assessed on a separate sheet to minimize direct comparisons between responses.

Demographic Data Checklist:

The checklist, filled out by one of the children’s parents, included questions about the children's gender, age, and prior experiences with dental visits.

Baumrind Parenting Style Questionnaire:

Parenting styles were assessed using the Persian version of the 30-item Baumrind Parenting Style Questionnaire, which comprises three 10-item subscales: authoritative, authoritarian, and permissive parenting. The questionnaire was completed by one parent of each participating child. Each item was rated on a five-point Likert scale ranging from 0 (strongly disagree) to 4 (strongly agree). The authoritarian subscale included items 2, 3, 7, 9, 12, 16, 18, 25, 26, and 29; the authoritative subscale included items 4, 5, 8, 11, 14, 15, 20, 22, 27, and 30; and the permissive subscale included items 1, 6, 10, 13, 17, 19, 21, 23, 24, and 28. Scores for each parenting style were calculated by summing the corresponding item scores, and the subscale with the highest score was used to identify the predominant parenting style. The psychometric properties of the Persian version of the questionnaire have been previously investigated by Minaei and Nikzad [14]. Additionally, Aminabadi et al. reported a two-week test–retest reliability coefficient of 0.74 for the parenting-style questionnaire in a pilot study [15].

Data Analysis:

Data were analyzed using IBM SPSS Statistics, version 22. Descriptive statistics were used to summarize demographic characteristics and children’s attitudes toward each Behavior management technique. Continuous variables were presented as mean ± standard deviation; categorical variables were reported as frequencies and percentages. Associations between authoritative parenting scores and children’s LOF scores were evaluated using Pearson’s correlation coefficients. Associations between categorical acceptance levels and demographic variables were evaluated using Pearson’s chi-square

test. Comparisons of continuous variables between two groups were performed using the independent-samples t-test. Statistical significance was set at $P < 0.05$. To account for multiple testing, the nine correlations between authoritative parenting scores and children's LOF ratings were additionally evaluated using a Bonferroni-adjusted significance threshold of $P < 0.0056$.

Results

Among the children aged 6–12 years, 96 child–mother dyads identified as having an authoritative parenting style, as determined by the Baumrind Parenting Style Questionnaire, were initially eligible for inclusion. Among the eight Behavior management techniques with verified 96-participant frequency distributions, positive reinforcement had the highest favorable-rating proportion (78.9%), followed by oral sedation (53.7%), TSD (43.2%), Mouth prop (40.6%), general anesthesia (36.8%), modeling (32.6%), voice control (28.4%), and active protective stabilization (28.4%), whereas passive protective stabilization was the least accepted.

Passive protective stabilization (24.2%). (Table 1)

Table 1
Children’s attitudes toward the nine behavior management techniques.

Behavior management technique	Negative n (%)	Neutral n (%)	positive n (%)
Tell–Show–Do	24 (25.0)	30 (31.3)	42 (43.8)
Modeling	29 (30.2)	36 (37.5)	31 (32.3)
Voice control	42 (43.8)	27 (28.1)	27 (28.1)
Mouth prop	28 (29.2)	29(30.2)	39(40.6)
Oral sedation	22 (22.9)	22 (22.9)	52 (54.2)
Active protective stabilization	37 (38.5)	31 (32.3)	28 (29.2)
Passive protective stabilization	45 (46.9)	27 (28.1)	24 (25.0)
General anesthesia	37 (38.5)	23 (24.0)	36 (37.5)
Positive reinforcement	5 (5.2)	15 (15.6)	76 (79.2)

Pearson correlation analysis revealed significant negative associations between authoritative parenting scores and children's attitudes toward modeling ($r = -0.226$, $P = 0.028$), voice control ($r = -0.266$, $P = 0.009$), mouth prop ($r = -0.254$, $P = 0.013$), and active protective stabilization ($r = -0.238$, $P = 0.020$). Among these techniques, voice control demonstrated the strongest negative correlation with authoritative parenting scores. These findings indicate that higher authoritative parenting scores were associated with lower acceptance of these Behavior management techniques. No statistically significant correlations were observed between authoritative parenting scores and children's attitudes toward Tell–

Show–Do, oral sedation, passive protective stabilization, general anesthesia, or positive reinforcement (all P > 0.05). (Table 2)

Table 2
Correlations between authoritative parenting scores and children's attitudes toward Behavior management techniques (n = 96)

Behavior management technique	Pearson's r	P-value
Tell–Show–Do	−0.168	0.104
Modeling	−0.226	0.028
Voice control	−0.266	0.009
Mouth prop	−0.254	0.013
Oral sedation	−0.069	0.504
Active protective stabilization	−0.238	0.020
Passive protective stabilization	−0.103	0.320
General anesthesia	0.043	0.679
Positive reinforcement	−0.001	0.992

Data are presented as Pearson's correlation coefficients (r) and corresponding two-sided P-values. Correlations were calculated between authoritative parenting subscale scores and continuous LOF scores for each Behavior management technique. All reported P-values are unadjusted. Although four associations reached nominal statistical significance (P < 0.05), none remained statistically significant after Bonferroni correction for nine comparisons (adjusted significance threshold: P < 0.0056).

The mean LOF scores for the nine behavior management techniques are presented in Fig. 2. Positive reinforcement received the highest mean attitude score (8.47), followed by oral sedation (6.61) and Tell–Show–Do (6.19). In contrast, passive protective stabilization had the lowest mean score (4.28), followed by voice control (4.79) and active protective stabilization (4.96).

There were no statistically significant differences in acceptance according to the child's age for any of the behavior management techniques, as all P-values were greater than 0.05. (TSD (P = 0.761), modeling (P = 0.515), voice control (P = 0.067), mouth prop (P = 0.388), oral sedation (P = 0.136), active protective stabilization (P = 0.896), passive protective stabilization (P = 0.253), general anesthesia (P = 0.201), and positive reinforcement (P = 0.506)).

Child gender was associated with acceptance of TSD ($\chi^2 = 6.210$, P = 0.045), oral sedation ($\chi^2 = 7.621$, P = 0.022), and general anesthesia ($\chi^2 = 13.777$, P = 0.001) in unadjusted chi-square analyses. For Tell–Show–Do, positive ratings were recorded for 40.4% of boys and 45.8% of girls, and neutral ratings for 42.6% and 20.8%, respectively. For oral sedation, 51.1% of boys and 56.3% of girls gave positive ratings;

neutral ratings were 34.0% and 12.5%, respectively. For general anesthesia, positive ratings were 42.6% in boys and 31.3% in girls, whereas negative ratings were 21.3% and 56.3%, respectively.

Discussion

The present study investigated the attitude of children with authoritative parents toward different BMTs. Authoritative parenting is associated with lower dental anxiety, greater cooperation, and fewer disruptive behaviors during dental treatment. Authoritative parents typically combine warmth, emotional responsiveness, and consistent behavioral expectations while encouraging autonomy and problem-solving. Children raised within such environments often develop better emotional regulation, greater self-efficacy, and stronger communication skills than children exposed to authoritarian or permissive parenting styles [8]. Consequently, these children may respond more positively to collaborative communication techniques, such as TSD and positive reinforcement, while demonstrating greater reluctance toward restrictive methods that conflict with their usual interpersonal experiences. However, because children from authoritarian and permissive parenting groups were not included in the final analysis, direct comparisons between parenting styles cannot be made. The American Academy of Pediatric Dentistry also emphasizes individualized, family-centered behavior management and recommends considering parental values, preferences, informed consent, and the child's previous behavioral experiences when selecting a technique [16].

Positive reinforcement received favorable ratings from most participants and was among the most positively perceived techniques in the present study. Positive reinforcement is recommended as a basic communicative behavior guidance technique in pediatric dentistry and aims to encourage desirable behavior through verbal praise and appropriate rewards [16, 17]. However, the present findings represent children's immediate attitudes toward a video demonstration rather than observed cooperation, changes in dental anxiety, or subsequent treatment experiences. Therefore, these favorable ratings should not be interpreted as direct evidence of clinical effectiveness.

TSD received favorable ratings from 43.8% of participants. Previous studies have reported beneficial effects of this technique on children's cooperation and dental anxiety. However, the present findings reflect children's perceptions of a video demonstration and do not establish whether TSD improved cooperation or reduced anxiety in the study population. Similar findings have been reported by Kumar Verma et al. [18] and Elicherla et al. [19], who showed that TSD significantly improves children's cooperation by increasing familiarity with dental instruments and procedures before treatment begins. According to cognitive developmental theory, uncertainty is a major source of childhood anxiety. TSD is intended to reduce uncertainty by providing age-appropriate explanations and allowing children to predict forthcoming events, thereby improving their sense of control. Consequently, the favorable ratings among a proportion of participants of TSD observed in the current study reinforce the recommendation of the American Academy of Pediatric Dentistry that communicative approaches should remain the primary behavior management strategy whenever feasible [16].

The acceptance of modeling in the present study was moderate, indicating that children's responses to observational learning may vary considerably between individuals. Although audiovisual modeling has been shown to reduce dental fear in several clinical studies, its effectiveness depends on multiple factors, including the child's age, previous experiences, cognitive development, and coping style [1, 20]. Children who prefer information-seeking coping strategies may benefit substantially from observing another cooperative child undergoing treatment, whereas children with avoidant coping styles may derive less benefit from detailed procedural demonstrations. However, in a study conducted by Kumari et al., it was found that modeling had a positive effect on the development of cooperative behaviors in children[20]. This variability may explain why modeling was not accepted as enthusiastically as positive reinforcement or TSD in the present study. A limitation of this study was the visual representation of the modeling technique. Children's acceptance was assessed based on a standardized representation of the behavior-management techniques. The effectiveness of modeling may depend on the similarity between the model and the child, the quality of the demonstration, the child's developmental level, and the clinical context. Therefore, responses to the presented representation of modeling may not completely reflect children's acceptance of modeling when implemented in routine clinical practice.

In contrast, passive protective stabilization and voice control demonstrated the lowest levels of acceptance among children [21, 22]. Restrictive interventions that reduce perceived autonomy may activate defensive emotional responses, increase physiological stress, and negatively influence children's future expectations regarding dental treatment. Likewise, voice control, although historically used to interrupt inappropriate behavior, may be interpreted by children as criticism or punishment rather than therapeutic communication. Consequently, repeated exposure to such approaches could potentially undermine trust between the child and the dental team [23].

Oral sedation demonstrated relatively high acceptance despite being a pharmacological intervention [24]. Children may interpret sedation as a means of reducing discomfort rather than controlling behavior, thereby increasing its acceptability. Current evidence and professional guidelines emphasize that pharmacological techniques should supplement, rather than replace, effective communicative behavior management after careful assessment of the child's medical condition, treatment complexity, and psychological needs [16, 25].

The present study found no significant association between children's age and their acceptance of any of the behavior management techniques. This finding suggests that, within the studied age range (6–12 years), developmental differences may not substantially influence children's perceptions of commonly used behavior management techniques. Similar observations were reported by Davies and Buchanan, who found that school-aged children demonstrated relatively consistent attitudes toward behavior management techniques despite minor developmental differences [21]. In contrast, Kantaputra et al. reported that younger children were generally more accepting of most behavior management techniques than older children, suggesting that increasing cognitive maturity and greater awareness of dental procedures may contribute to more critical evaluations of treatment approaches[22]. The discrepancy between these findings may be explained by methodological differences, including variations in

participants' age ranges, cultural backgrounds, and methods used to assess children's attitudes. Unlike previous studies that included adolescents or relied on verbal descriptions of behavior management techniques, the present study evaluated only school-aged children using standardized educational videos, which may have minimized age-related differences in understanding and perception.

The present study identified weak negative correlations between authoritative parenting scores and children's acceptance of modeling (P = 0.028), voice control (P = 0.009), mouth prop (P = 0.013), and active protective stabilization (P = 0.020). Although these associations reached nominal statistical significance, their small correlation coefficients suggest that the relationships were weak and should be interpreted cautiously. One possible explanation is that children exposed to higher levels of authoritative parenting may develop greater expectations of autonomy, communication, and participation in decision-making, potentially influencing their perceptions of certain Behavior management techniques. However, this interpretation remains speculative and cannot be established from the present cross-sectional findings. Importantly, multiple correlation analyses were performed without adjustment for multiple comparisons, increasing the possibility of chance findings. None of the observed associations would remain statistically significant. Therefore, these results should be regarded as exploratory rather than confirmatory. Further studies with larger samples, appropriate control of potential confounding factors, and prespecified statistical analyses are needed to clarify the relationship between authoritative parenting scores and children's attitudes toward dental Behavior management techniques.

Regarding gender, significant differences were observed for TSD, oral sedation, and GA, whereas acceptance of the remaining techniques did not differ significantly between boys and girls. Previous studies have reported inconsistent findings regarding gender-related differences in children's responses to behavior management techniques. Several investigations found no significant gender effect on children's dental anxiety or acceptance of behavior management techniques [26], supporting the present findings for most techniques. Conversely, other studies have suggested that girls may exhibit greater dental anxiety and emotional sensitivity than boys, potentially influencing their preferences for certain communication or pharmacological approaches [27]. These inconsistencies likely reflect the multifactorial nature of children's behavioral responses, in which gender interacts with temperament, previous dental experiences, parenting practices, and sociocultural expectations rather than acting as an independent determinant. Therefore, although statistically significant gender differences were identified for selected techniques in the present study, their clinical significance should be interpreted cautiously. Individual psychological characteristics and family-related factors are likely to play a more influential role than biological sex alone when selecting appropriate behavior management techniques.

An important contribution of the present study is that children's attitudes were assessed using standardized educational videos presented in randomized sequences, to reduce potential presentation-order effects while ensuring that all participants received identical explanations of each behavior management technique. The previously described Line of Favor scale provided a simple quantitative method for recording children's immediate attitudes toward the demonstrated techniques. Nevertheless, the reliability and validity of the scale in the present study population were not independently

established. From a clinical perspective, assessment of children's preferences and family-related psychosocial characteristics may complement conventional behavioral assessment when selecting Behavior management strategies. However, parenting characteristics should not be used in isolation to predict a child's behavior or to determine the choice of a specific technique. Behavior management should remain individualized and based on the child's developmental level, previous experiences, anxiety, treatment needs, parental preferences, and clinical circumstances.

Several limitations should be acknowledged. First, the study was conducted at a single university-based pediatric dentistry department, which may limit the generalizability of the findings. Second, the study population was restricted to children whose parents demonstrated a predominant authoritative parenting style, preventing comparisons across different parenting styles. Third, the cross-sectional design precludes causal inference. Fourth, potential confounding factors, including child temperament, baseline dental anxiety, parental anxiety, and socioeconomic characteristics, were not comprehensively controlled. Finally, children's attitudes were assessed following standardized video demonstrations rather than actual dental procedures. In particular, the general anesthesia video primarily demonstrated intravenous cannulation, which may have influenced children's evaluations independently of their perceptions of general anesthesia itself.

Conclusion

Positive reinforcement was the most favorably evaluated Behavior management technique, whereas passive protective stabilization received the lowest acceptance among children from families with predominant authoritative parenting. Weak exploratory associations were observed between authoritative parenting scores and children's attitudes toward selected techniques. These findings highlight the importance of considering children's perspectives in pediatric dental behavior guidance, while further studies are needed to establish the role of parenting characteristics.

Declarations

Ethics approval and consent to participate

The study was approved by the Research Ethics Committee of Isfahan University of Medical Sciences (IR.MUI.RESEARCH.REC.1399.090). Written informed consent was obtained from the parents or legal guardians of all participating children, and age-appropriate assent was obtained from the children. The study was conducted in accordance with the Declaration of Helsinki.

Consent for publication

Not applicable, provided that the manuscript contains no identifiable participant information or images requiring publication consent.

Competing interests

The authors declare that they have no competing interests.

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Author Contribution

RF contributed to the conceptualization and study design, and critically revised the manuscript. SZ contributed to the study design and critical revision of the manuscript. MJS contributed to the study methodology, statistical analysis, and interpretation of the results. MF contributed to participant recruitment, data collection, and data organization. NN contributed to data interpretation, preparation of tables and figures, and drafting and revising the manuscript. All authors reviewed and approved the final manuscript and agreed to be accountable for their contributions.

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Data Availability

The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request.

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Figures

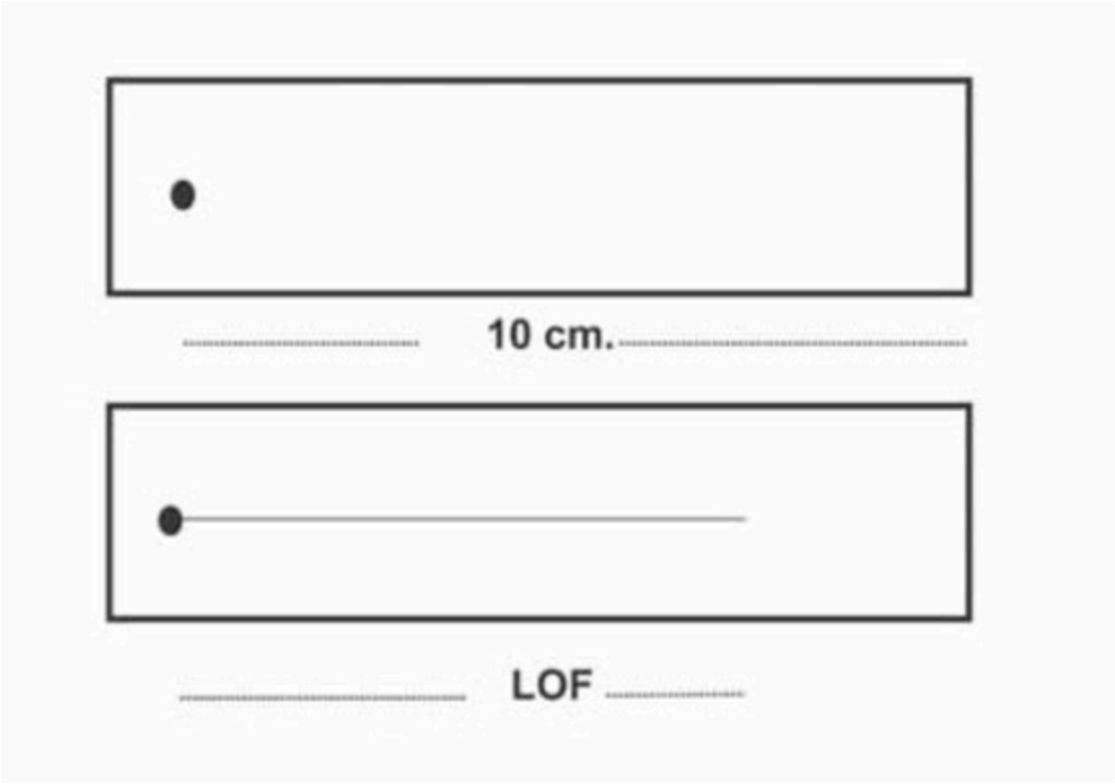


Figure 1

Line of Favor (LOF) scale used to assess children's attitudes toward dental Behavior management techniques. Children indicated their attitudes by drawing a horizontal line from the left starting point along a 10-cm scale. The length of the line was measured in centimeters, with higher scores indicating more favorable attitudes toward the demonstrated technique. Scores were categorized as negative (0–3.0 cm), neutral (3.1–7.0 cm), or positive (7.1–10.0 cm).

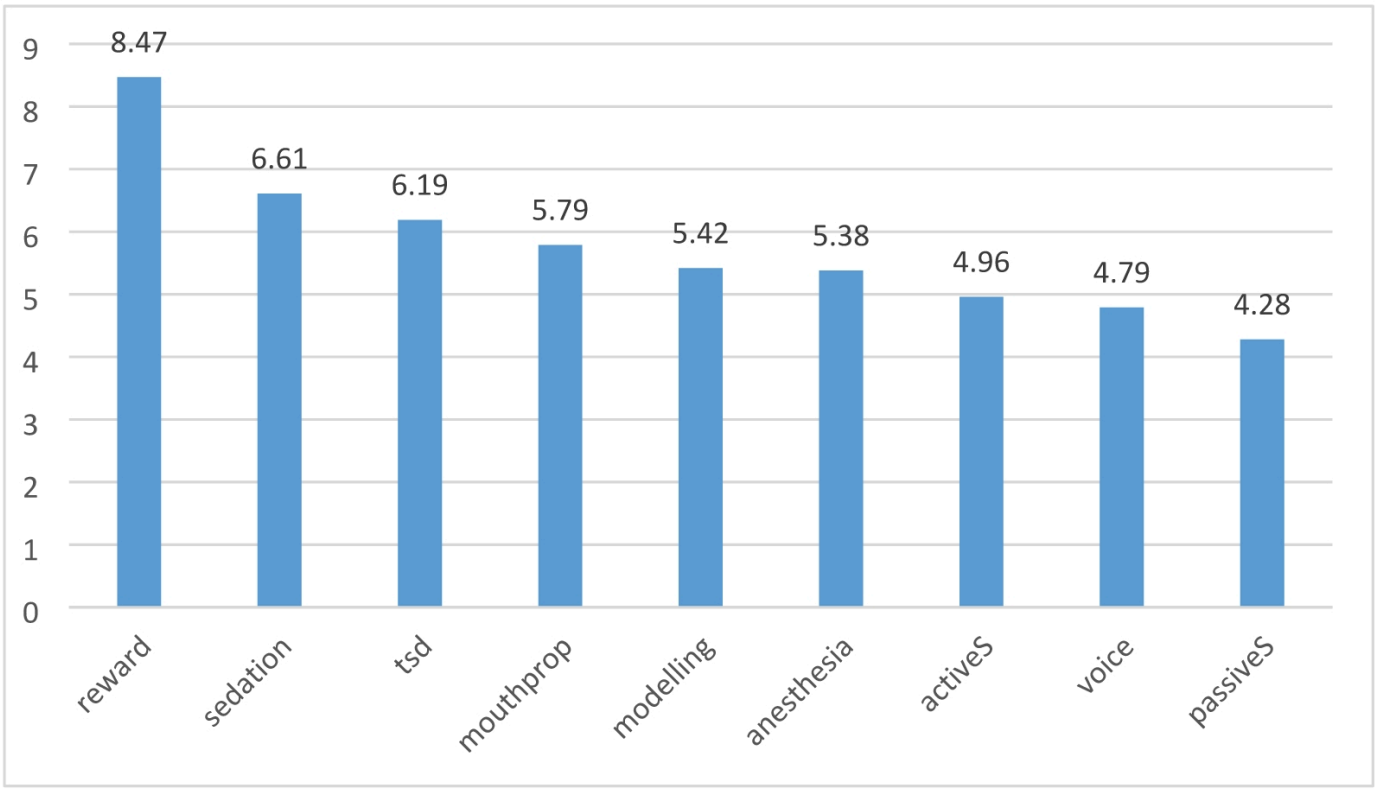


Figure 2

Mean children's attitude scores toward behavior management techniques

Mean LOF scores are presented on a 0–10 scale, with higher scores indicating more favorable attitudes toward each technique. Positive reinforcement received the highest mean score (8.47), whereas passive protective stabilization received the lowest (4.28).