

Parenting Styles and their Influence on Child's Dental Behavior and Caries Status: An Analytical Cross-Sectional Study

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Aim: The present study aimed to evaluate the association between parenting styles, child's behavior in dental setting and dental caries status. **Study design:** Children aged 3-7 years on their first dental visit were included in the study. Their parents were asked to complete Parenting Style Dimension Questionnaire (PSDQ) to assess their parenting style. Oral prophylaxis was performed for the children and their behavior was assessed using Frankl behavior rating scale. Their caries status was recorded using DMFT/deft index. **Results:** Out of 315 parents, 240 parents exhibited authoritative parenting style, 45 exhibited permissive and 30 exhibited authoritarian parenting style. Permissive parenting was associated with four-fold increase in the child's negative dental behavior and authoritarian parenting showed two-fold increase in the negative behavior of children compared to authoritative parenting. Children of both authoritative and authoritarian parents showed less caries status and the permissive parenting depicted threefold increase in the caries status compared to authoritative parenting. **Conclusion:** Children of both the permissive and authoritarian parents showed more negative dental behavior than children of authoritative parents. Children of permissive parents showed increased caries status compared to the children of authoritative parents.

Keywords: Parenting styles, child's dental behavior, child rearing

INTRODUCTION

Most of the child's characteristics like personality, behavior, cognitive and social development depend mainly on the parental characteristics. Ability of a child to interact in a healthy way with people around, such as in schools or at dental office relies on how they have been disciplined at their homes.¹ Segrin *et al*² stated that in recent years, parents are overinvolved and keep children away from harm by anticipatory problem solving. This is way different from the antecedent parenting style which allows the child to confront stressful situations by setting limits and saying 'no'.³⁻⁵ The way in which a child is nurtured at home has a greater impact on dental behavior as well.⁴ Saadia *et al*⁵ elaborated various challenges faced by pediatric dentists while communicating with children and highlighted different types of children and parents seen in newer generations. This accentuates the importance of knowing different parenting styles for a better understanding of the child and providing successful treatment with effective behavior management.

Parenting style refers to the attitudes, beliefs and behaviors that parents use to create an approach or parental emotional atmosphere used to nurture their children.⁶ Parenting style influences the general and oral health of the child as well. Effective parenting behaviors, such as parental support, have been found to be positively related to child's coping strategies.⁷ A child's coping ability is the major determinant of behavior shaping and hence it has a major impact on the interactions with dentist in the dental settings.⁸

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Previous studies exploring the association between parenting styles and child's behavior have primarily examined the authoritarian, authoritative and permissive parenting styles characterized by Baumrind almost 50 years ago.¹ Authoritative parents show high warmth and high control. These parents depict explicit nurturance and they concurrently discipline with rational thinking. Authoritative parents listen to their children, allow autonomy, and encourage independence. They explain the situations with reasons instead of demanding blind obedience. They use positive discipline instead of punitive, forceful measures. As a result, these children are independent, self-reliant, explore new environment without fear, develop emotional regulation and self-control.⁹ Authoritarian parents on the other hand depict high control and low warmth. They are power assertive, highly demanding, psychologically controlling and are often punitive and forceful in order to adhere to an absolute standard for behavior. They provide unidirectional communication, punish hardly if the rules are not strictly followed. Saadia *et al*⁵ termed a group as abusive parents, the ones who are self-centered and tend to affect their child's self-confidence by using statements like "My child will never wear this appliance", "He is not capable to do this..." They verbally and emotionally ill-treat their children because these children did not live-up to the expectations and wishes of their parents.⁵ Although both authoritative and authoritarian parents place high demands on their children, they are different in how they try to control them. Authoritative parents use reasoning to explain rules whereas authoritarian parents use 'because I said so' to rule.¹⁰ Permissive parents promote high warmth and exhibit low behavioral control. Parents included in this type are affirming, avoid confrontations and place few behavioral demands on the child.^{11,12} Various questionnaires have been employed in previous studies such as Parenting Style Dimension Questionnaire (PSDQ)¹³, Primary Caregivers Practices Reports (PCRR)¹⁴, Child-rearing Practices Report.¹⁵

There are intergenerational differences in parenting styles that are attributed to the children's problematic behavior in the dental office.¹⁶ Children of 21st century parents who are less controlling have been linked to higher levels of dental anxiety.¹⁷ As a result, dentists are gradually moving towards behavior guidance using drugs for sedation, protective stabilization instead of conventional behavior shaping methods.^{3,18} Literature search showed vague association between different parenting styles and their impact on child's behavior at dental office. Aminabadi *et al*,^{14,19} Howenstein *et al*,¹³ Venham *et al*²⁰ reported that there was a positive correlation between parenting styles and child's dental behavior. Studies by Krikken *et al*^{15,21,22} showed no association between parenting style and child's dental behavior.

Role of dietary habits on the development of dental caries is well established. Parents as a primary caretaker have a major concern on their child's dietary intake and oral hygiene measures.²³ Howenstein *et al*¹³ showed positive correlation between parenting style and dental caries. The association between parenting style, child's dental behavior and dental caries has not been studied in an Indian setting. Hence this study was planned to test the null hypothesis that was no association between parenting style, child's dental behaviour and dental caries.

MATERIALS AND METHOD

The present cross-sectional study was conducted in Department of Pedodontics and Preventive dentistry, KSR Institute of Dental Science and Research (KSRIDSR), Tiruchengode, Tamil Nadu, India. The study design and protocol was analyzed and approved by the Institutional Review Board and Institutional Ethics Committee of KSRIDSR. The sample size estimation was done using G*Power version 3.1.9.2 software with the significance level set at five percent and power of the test as 80%. The estimated sample size was 276 children. The study sample included Indo-Aryan children in the age range of 3 to 7 years who had their first dental visit in the Department of Pedodontics and Preventive Dentistry between June 2018 and October 2018. This age group was chosen to minimize the peer influences on child's dental behavior. A convenient sample of children accompanied by their parents (either mother or father) were only enrolled in the study. Children who reported with history of pain, systemic illness and special health care needs were excluded from the study. Purpose of the present study was explained to the parents. Verbal and written consent were obtained from the participants and their parents prior to the start of the study.

Children were screened from the daily records and the eligible child-parent pair who have provided the informed consent were selected. The primary investigator (PI) who had no interaction with the parent-child pair performed comprehensive examination and assessed the caries status of the children. Caries status was recorded as caries free (DMFT(def) = 0), low (DMFT(def) = 1-4), high (DMFT(def) >4).²⁴ Oral prophylaxis was done for these children and their behavior during the procedure was assessed using Frankl behavior rating scale by the PI. The parents of these children were then asked to fill the Parenting Styles and Dimensions Questionnaire (PSDQ).

Data from the questionnaires were assessed and the parenting style of each parent was determined by the secondary investigator who was blinded about the study. All data were transferred to excel sheets and analyzed by the statistician who was also blinded. For statistical analysis, behavior was dichotomized into positive and negative categories. Results were tabulated and statistical analysis was done using SPSS 17.0 software. The categorical variables were analyzed by the chi-square or Fisher's exact test, to compare the association, odds ratios (ORs) and the corresponding 95% confidence intervals (95% CIs) were calculated in logistic regression analysis when the outcomes were dichotomous and by means of multinomial regression when the outcomes included more than two categories.

Parenting Styles and Dimensions Questionnaire (PSDQ)

PSDQ designed by Robinson *et al*²⁵ was used in this study after obtaining permission from the author. This questionnaire consisted of 30 items divided into three categories depicting authoritative, authoritarian and permissive parenting style based on the different parent reactions to child behavior.^{25,26} Questions were presented in both English and native language (Tamil). Linguistic validation was done by translation to native language and back translation to English by blinded translators. The content and quality of the new document was compared with the source document. Each question has a scale ranging from one to six (one equals never, two equals rarely,

three equals occasionally, four equals half the time, five equals very often, and six equals always) and the scoring key ranges from zero to five. The authoritative and authoritarian style questions included 13 items with a potential score range from zero to 65. The permissive style questions included four items with a score range from zero to 20. An overall mean score in each parenting style category was calculated and the highest mean score among the three determined the parenting style of that particular parent (Appendix).

RESULTS

The final sample consisted of 315 parent-child pair. There were 169 boys (54%) and 146 girls (46%) with the mean age range of 6.44±0.60 years. There was no statistical significant difference in the mean age of children among the three types of parenting groups (p=0.58). Among 169 boys, 139 showed positive behavior and 30 negative behavior. One hundred and seventeen girls showed positive behavior and 29 girls expressed negative behavior. There was no statistical significant difference in the dental behavior between the boys and girls (p=0.10). Among the 169 boys, parents of 128 boys, 15 boys and 26 boys were authoritative parents, authoritarian parents and permissive parents respectively. Parents of 112 girls, 15 girls and 19 girls depicted authoritative, authoritarian and permissive parenting style respectively. There was no significant difference in the parenting style distribution among the boys and girls (p=0.08).

Out of 315 parents, 214 fathers and 101 mothers filled the questionnaire. The mean age group of parents was 46.32±0.78 years. Two hundred and forty parents (76%; 164 fathers and 76 mothers) exhibited authoritative parenting style. Authoritarian parenting style was seen in 30 parents (10%; 19 fathers and 11 mothers). Forty-five parents (14%; 31 fathers and 14 mothers) depicted permissive parenting style (Table 1). There was no significant difference in the parenting styles based on the gender of the parents (p=0.85).

Table 1: Frequency distribution of parenting style, child's behavior and dental caries status

Child's behavior	N	%
Positive	256	81.3
Negative	59	18.7
Caries status		
Caries free	154	48.9
Low	128	40.6
High	33	10.5
Parenting style		
Authoritative	240	76.2
Authoritarian	30	9.5
Permissive	45	14.3
Total	315	100

Parenting style and child dental behavior

Out of 240 children of authoritative parents, 225 children showed positive behavior (94%) and 15 children exhibited negative behavior (6%). Among 30 children of authoritarian parents, 14 children (47%) showed positive behavior and 16 children (53%) depicted negative behavior. Among 45 children of permissive parents, 17 children (38%) showed positive behavior and 28 children (62%)

showed negative behavior (Table 1). Authoritative parented children depicted positive behavior to a greater extent when compared to the other parenting styles. Ordinal logistic regression model suggested that permissive parenting style was associated with approximately four-fold increase in the negative behavior of children. Authoritarian parenting style showed two-fold increase in the negative behavior when compared to authoritative parenting style (Table 2).

Table 2: Association between parenting styles and child's behavior

Parenting style	Child's behavior		OR	95% CI
	Positive N(%)	Negative N(%)		
Authoritative	225(94)	15(6)	1.0	
Authoritarian	14(47)	16(53)	2.232	0.842-5.919
Permissive	17(38)	28(62)	4.354	2.992-6.337

OR – Odds Ratio; CI – Confidence Interval

*Chi square, Ordinal Logistic Regression

Parenting style and dental caries

In authoritative parenting category, 134 children (56%) were caries free, 93 children (39%) exhibited low caries and 13 children (5% percent) had high caries status. Among authoritarian parented children, 14 (47%) were caries free, 16 children (53%) had low caries and none exhibited high caries. In permissive parenting category, 6 children (13%) were caries free, 19 children (42%) had low caries and 20 children (45%) showed high caries status (Table 1). Children of both authoritative and authoritarian parents had low caries status and the permissive parenting style depicted threefold increase in caries status when compared to authoritative parenting style (Table 3).

Table 3: Association between parenting styles and child's dental caries status

Parenting style	Caries status			OR	95% CI
	Caries free N(%)	Low N(%)	High N(%)		
Authoritative	134(56)	93(39)	13(5)	Ref	
Authoritarian	14(47)	16(53)	0	0.912	0.038-0.998
Permissive	6(13)	19(42)	20(45)	3.752	0.597-5.624

OR – Odds Ratio; CI – Confidence Interval

*Chi square, Ordinal Logistic Regression

DISCUSSION

Parenting styles gained greater interest in recent times because of the changing trends. Very few literatures had analyzed the association between parenting styles, child's dental behavior and their caries status. Berkeley growth study highlighted the greatest impact of parental influence on child's personality development.²⁷ Understanding a child in every aspect is important in behavior management. The present study included children of 3 to 7 years particularly to minimize the peer influence on child's dental behavior. In this study children from authoritative homes exhibited more preferable dental behavior and comparatively less caries status. This may be because, authoritative parents clearly set rules and use reasoning

to enforce them. They encourage bidirectional communication, support children's independence. As a result, children in authoritative households have happier temperament, improved social skills, higher emotional control and coping abilities.²⁸ This was in accordance with the findings by Aminabadi *et al*^{14,19} which provided evidence that the Iranian children's dental behavior was influenced by the caregiver's parenting style. Howenstein *et al*¹³ showed the association of authoritative parenting with more desirable dental behavior among the American children.

Children of permissive parents were associated with the most negative dental behavior and higher caries status. Permissive parents have been conceptualized as indulgent and the children are co-owners of the house, allowed to make their own rules. These children are very demanding and will throw tantrums when their wishes are not met.⁵ As permissive parents avoid confrontations and always tend to pamper their child, they can choose to misbehave and the parents provide comfort rather disciplining them.^{4,29} This was consistent with the hypothesis of Venham *et al*²⁰ which stated that the child rearing practices have greater impact on child's acquisition of coping skills and stress tolerance. The higher caries status among these children could be attributed to the fact that the permissive parents exhibit less control over their child's cariogenic food habits and oral hygiene maintenance.^{29,30}

Children of authoritarian parents were associated with less cooperative behavior and low caries status. Negative behavior of these children may be attributed to their fearful nature and lack of trust on people. Children in authoritarian homes are shy, fearful and often have difficulties in social interactions.^{31,32} However in a study by Krikken *et al*²² no clear association was found between the

parenting style and dental anxiety of children of Netherland. The decreased dental caries status in this group may be due to the strict rules followed in authoritarian homes and they forcefully make their children adhere to the rules. This result was in contradiction to the findings by Howenstein *et al*¹³ which reported increased caries in authoritarian parented children.

In the present study, approximately 80% of the children showed positive behavior owing to the fact that behavior assessment was done during a non-invasive procedure. A convenient sample of patients who were reported to the department were included in this study which may not represent the general population. It would be a fascinating topic for the future researchers to explore the detailed perceptions of parenting styles and their influence on children in different dimensions. The current study is of greater importance to pediatric dentists as it highlights the sole responsibility of a pediatric dentist to create awareness of good parenting for the welfare of child. Better understanding of children always pay way for better management of children in dental practice.

CONCLUSION

The results of this study carried out in an Indian setting suggest that, children of both the permissive and authoritarian parents showed more negative dental behavior than children of authoritative parents. Children of permissive parents also showed increased caries status compared to the children of authoritative parents. These results help in establishing the fact that the parenting styles have a major influence on the dental behavior of children across the globe. It also stresses the importance in identifying parenting styles in a dental setting as parents play a major role in behavior guidance.

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APPENDIX

Parenting style dimension questionnaire (PSDQ)

1. I am responsible for my child's feelings and needs
Never 1 2 3 4 5 6 Always
2. I take my child's wishes into consideration before I ask him/her to do something
Never 1 2 3 4 5 6 Always
3. I explain to my child how I feel about his/her good/bad behavior
Never 1 2 3 4 5 6 Always
4. I encourage my child to talk about his/her feelings and problems
Never 1 2 3 4 5 6 Always
5. I encourage my child to freely "speak his/her mind", even if he/she disagrees with me
Never 1 2 3 4 5 6 Always
6. I explain the reasons behind my expectations
Never 1 2 3 4 5 6 Always
7. I provide comfort and understanding when my child is upset
Never 1 2 3 4 5 6 Always
8. I compliment my child
Never 1 2 3 4 5 6 Always
9. I consider my child's preferences when I make plans for the family (e.g., weekends away and holidays)
Never 1 2 3 4 5 6 Always
10. I respect my child's opinion and encourage him/her to express them
Never 1 2 3 4 5 6 Always
11. I treat my child as an equal member of the family
Never 1 2 3 4 5 6 Always
12. I provide my child, the reasons for the expectations I have for him/her
Never 1 2 3 4 5 6 Always
13. I have warm and intimate times together with my child
Never 1 2 3 4 5 6 Always

1. When my child asks me why he/she has to do something I tell him/her it is because I said so, I am your parent, or because that is what I want

Never 1 2 3 4 5 6 Always

2. I punish my child by taking privileges away from him/her (e.g., TV, games, visiting friends)

Never 1 2 3 4 5 6 Always

3. I yell when I disapprove of my child's behavior

Never 1 2 3 4 5 6 Always

4. I explode in anger towards my child

Never 1 2 3 4 5 6 Always

5. I spank my child when I don't like what he/she does or says

Never 1 2 3 4 5 6 Always

6. I use criticism to make my child improve his/her behavior

Never 1 2 3 4 5 6 Always

7. I use threats as a form of punishment with little or no justification

Never 1 2 3 4 5 6 Always

8. I punish my child by withholding emotional expressions (e.g., kisses and cuddles)

Never 1 2 3 4 5 6 Always

9. I openly criticize my child when his/her behavior does not meet my expectations

Never 1 2 3 4 5 6 Always

10. I find myself struggling to try to change how my child thinks or feels about things

Never 1 2 3 4 5 6 Always

11. I feel the need to point out my child's past behavioral problems to make sure he/she will not do them again

Never 1 2 3 4 5 6 Always

12. I remind my child that I am his/her parent

Never 1 2 3 4 5 6 Always

13. I remind my child of all the things I am doing and I have done for him/her

Never 1 2 3 4 5 6 Always

1. I find it difficult to discipline my child

Never 1 2 3 4 5 6 Always

2. I give into my child when he/she causes a commotion about something

Never 1 2 3 4 5 6 Always

3. I pamper my child

Never 1 2 3 4 5 6 Always

4. I ignore my child's bad behavior

Never 1 2 3 4 5 6 Always