

Impact of Parenting Style on Child's Behavior and Caries Experience in 3–6-year-old Children: A Cross-sectional Study

Kodati Shalini¹, KS Uloopi², C Vinay³, A Ratnaditya⁴, Kakarla Sri RojaRamya⁵, Penmatsa Chaitanya⁶

ABSTRACT

Aim: The aim of the study is to evaluate the impact of parenting style on a child's behavior and caries experience in 3–6-year-old children.

Materials and methods: This cross-sectional study included 1,216 parent-child pairs of 3–6-year-old preschool children. Parenting style was determined using Parenting Style and Dimensions Questionnaire (PSDQ). Child behavior was assessed using Frankl's behavior rating scale, and caries experience was recorded using the decayed, extracted and filled deciduous teeth surfaces index.

Results: Out of the 1,216 parents, the authoritative parenting style is seen in 70%, authoritarian in 20%, and permissive parenting style in 9.5%. Children with a permissive type of parenting style have shown more negative behavior. Children of authoritative parents had 4.1 times higher odds of exhibiting definitely positive behavior, which is statistically significant ($p = 0.004$). Children of positive child behavior had 2.4 times higher odds of avoiding caries which is statistically significant ($p = 0.0001$). Children of authoritarian parents had 1.45 times higher odds of exhibiting caries than children of permissive parents; however, this difference is not statistically significant.

Conclusion: Children of authoritative parents demonstrated low caries experience and desirable behavior in the dental office. On the contrary, children of permissive parents exhibited undesirable dental behavior, and children of authoritarian parents had high caries experience.

Clinical significance: Twenty-first-century parents are less controlling and are more permissive leading to problematic child behavior in the dental office. Parenting styles have an impact on the effectiveness of behavior management as well as dental treatment. Pediatric dentists should identify different parenting styles and anticipate the child's behavior. This study emphasizes the effect of different parenting styles on a child's behavior and dental caries experience.

Keywords: Caries experience, Child behavior, Parenting style, Preschool children.

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INTRODUCTION

Behavior refers to actions, reactions, and functioning in response to the environment and situations. The behavior of a child is influenced by numerous variables such as parental factors, culture, fear, anxiety, cognitive development, and temperament.¹ Undesirable child behavior makes it difficult to provide effective dental treatment.

Pediatric dentistry comprises more complicated child-parent-dentist interaction than just patient-dentist interaction. The emotions and attitudes of the parent have an intense effect on the emotional development of the child. Children of emotionally intelligent mothers have more adaptive behavior during dental treatment²; likewise, a fearful and anxious parent has a greater likelihood of having an uncooperative child in the dental operatory.¹

Parenting style is a function of parental attitudes, beliefs, and behaviors, creating the emotional context for the child.³ A child's behavior varies according to different parenting styles, and parenting style is an essential determinant of the child's coping skills, which may influence the child's behavior in the dental office and alter the effective treatment.⁴

Baumrind explained three parenting styles, that is, authoritative, authoritarian, and permissive. The authoritative (high warmth and high control) parent exhibits compassion and warmth, yet they are firm and limit-setting, and these households have bidirectional communication. The authoritarian (high control and low warmth) parenting style is defined by harsh parenting practices, including

^{1–6}Department of Pedodontics and Preventive Dentistry, Vishnu Dental College and Hospital, Bhimavaram, Andhra Pradesh, India

Corresponding Author: Kakarla Sri RojaRamya, Department of Pedodontics and Preventive Dentistry, Vishnu Dental College and Hospital, Bhimavaram, Andhra Pradesh, India, Phone: +91 8985774540, e-mail: roja.ramya86@gmail.com

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physical punishment, yelling, and commands. Children are usually withdrawn and distrustful in authoritarian houses. The permissive (high warmth and low control) parent often spoils and coddles the child with few to no demands or restrictions, and the child behaves irresponsibly.^{5,6}

Young children depend on parents for dietary habits and oral hygiene practices, which play an important role in the development of caries, and this, in turn, can be influenced by parenting style. Inappropriate parenting can lead to undesirable dental behavior with high caries experience and delay in dental treatment.⁷ Therefore, a study was carried out to know the impact of parenting style on a child's dental behavior and caries experience in 3–6-year-old children.

MATERIALS AND METHODS

The cross-sectional study was approved by the Institutional Review Board (VDC/IEC/2018/34). A total of 1,216 schoolchildren of age 3–6 years were selected from 12 preschools in Bhimavaram town, West Godavari, Andhra Pradesh. The purpose and nature of the study were explained, and verbal and written informed consent was obtained from the parents and the school authorities prior to the commencement of the study. Children with phobias (dentophobia, trypanophobia, white coat syndrome, and agoraphobia), medically compromised children, and children with a single parent were excluded from the study.

Sample Size Estimation

Based on the data from the pilot study, setting the confidence level at 95%, proportion at 24%, and precision at 2.4%, the required sample size was calculated as 1,216 children using the formula $n = Z\alpha^2 p(1 - p)/d^2$.

Assessment of Parenting Style

Parenting style was determined using PSDQ given by Robinson et al.⁸ The questionnaire was employed to assess the parenting style according to Baumrind's primary parenting types, viz authoritarian, authoritative, and permissive.⁵ This prevalidated questionnaire consists of 25 items, and the responses were recorded based on a 5-point Likert scale (1 = never, 2 = once in a while, 3 = half the time, 4 = very often, and 5 = always), which categorizes parents as authoritative, authoritarian, and permissive based on the category in which the highest mean score is obtained. It comprises 12, 6, and 7 items for authoritative, authoritarian, and permissive parenting, respectively.

Assessment of Child's Behavior

The behavior of the child was assessed using Frankl's scale, a validated measure of the child's behavior, which categorizes behavior as definitely negative, negative, positive, and definitely positive.⁹

Assessment of Caries Experience

An oral examination was carried out, and caries status was recorded. Caries experience of the child was assessed by the "d" component in the "defs" index.

Statistical Analysis

The obtained data were analyzed using Statistical Package for the Social Sciences software (version 20, Armonk, New York, United States of America: IBM Corp.), and the Chi-squared test was used for intergroup comparison. Linear regression analysis was used to know the association between the variables. The probability value of ≤ 0.05 was set as significant and ≤ 0.001 as highly significant.

RESULTS

The majority of the children, that is, 70% of the study population, were subjected to an authoritative parenting style and around 20% were subjected to an authoritarian parenting style, while a permissive parenting style was less frequently observed in only 9.5% of the children. The most common behavior observed was positive type in 51.5%, followed by negative behavior in 27.5% and definitely positive in 13.9% of the children. Definitely, negative behavior was rarely observed in only 7.1% of the children. Regarding caries experience, 55% were caries-free, and 45% had caries.

The children who were subjected to authoritative as well as authoritarian parenting styles showed a positive type of behavior more frequently (55.2 and 44.4%, respectively) than other types of behaviors. Children who were subjected to a permissive parenting style have shown a negative type of behavior (43.5%) more frequently, and the difference is statistically significant (Table 1).

Children subjected to the authoritarian parenting style were more caries-prone (55.2%) compared to authoritative (41.6) and permissive (47.8%) parenting styles, and children subjected to the authoritative parenting style were more caries-free (58.4%) compared to authoritarian (44.8%) and permissive (52.2%) parenting styles (Table 2).

Children with negative and definitely negative child behavior were more caries prone (58.8 and 57%, respectively) when compared to definitely positive (50.9%) and positive (34.3%) child behaviors. Children with positive and definitely positive child behavior were more caries-free (65.7 and 49.1%, respectively) when compared to negative (41.2%) and definitely negative (43%) child behaviors (Table 3).

Table 1: Distribution of child behavior patterns according to parenting style

Parenting style	Child behavior				Total	Chi-square value	p-value
	Definitely positive	Positive	Negative	Definitely negative			
Authoritative	15.7% (134)	55.2% (471)	23.3% (199)	5.7% (49)	100% (853)	43.602	0.000, HS
Authoritarian	10.9% (27)	44.4% (110)	34.7% (86)	10.1% (25)	100% (248)		
Permissive	7.0% (8)	39.1% (45)	43.5% (50)	10.4% (12)	100% (115)		
Total	169	626	335	86	1,216		

Chi-squared test; HS, highly significant

Table 2: Distribution of children's caries experience according to parenting style

Parenting style	Caries experience		Total	Chi-square value	p-value
	Present	Absent			
Authoritative	41.6% (355)	58.4% (498)	100% (853)	14.825	0.000, HS
Authoritarian	55.2% (137)	44.8% (111)	100% (248)		
Permissive	47.8% (55)	52.2% (60)	100% (115)		
Total	547	669	1,216		

Chi-squared test; HS, highly significant

Children subjected to an authoritative parenting style had 4.1 times higher odds of exhibiting definitely positive behavior when the permissive parenting style is taken as constant, and this effect is statistically significant ($p = 0.004$) (Table 4).

Children of authoritative parents had 1.086 times higher odds of avoiding caries than children with permissive parents, and this effect is not statistically significant ($p = 0.689$). Children of authoritarian parents had 1.45 times higher odds of exhibiting caries than children with permissive parents, and this effect is not statistically significant ($p = 0.106$). Children with positive child behavior had 2.4 times higher odds of avoiding caries than children with definitely negative behavior, and this effect is statistically significant ($p = 0.0001$) (Table 5).

DISCUSSION

The behavior of the child is influenced by numerous factors, among which parental and immediate family environments have the greatest impact. A child's ability to interact in a healthy way with people around them, such as in schools and dental offices, depends on how they have been disciplined at their homes. The way in which a child is nurtured at home has a greater impact on dental behavior as well.¹ Berkeley Growth Study highlighted the impact of parental influence on a child's personality development.¹⁰ This emphasizes the importance of understanding parenting styles to better understand the child and provide effective dental treatment.

The current study showed that children with authoritative parenting have the most consistent positive behavior when compared to the other two parenting styles, as these parents clearly set rules with reasoning. Children in authoritative homes have happier dispositions, greater emotional control and regulation, and improved social skills and coping abilities, which would suggest children behave better at the dental office. This observation is consistent with Aminabadi and Farahani, which states that authoritative parenting was associated with improved child behavior compared to authoritarian and permissive parenting.¹¹ Querido et al. have also concluded that authoritative parenting is associated with fewer child behavior problems.⁶

In the present study, it was found that children of authoritarian parenting style have less cooperative behavior compared to authoritative parents, and this may be due to a fearful and stressful environment at home, which results in a lack of trust in people. Permissive parenting results in frequent negative behavior, and this might be because of the indulgent parenting nature, which makes the child misbehave in the dental office. Similarly, Aminabadi and Farahani also reported that an authoritarian parenting style resulted in less cooperative behavior, and permissive parenting resulted in more negative child behavior during dental treatment.¹¹

Literature evidence suggests a correlation between parenting style and a child's dental behavior. Howenstein et al. and Venham et al. reported a positive correlation between

Table 3: Distribution of children's caries experience according to the child behavior

Child behavior	Caries experience		Total	Chi-square value	p-value
	Present	Absent			
Definitely positive	50.9% (86)	49.1% (83)	100% (169)	61.869	0.0001, HS
Positive	34.3% (215)	65.7% (411)	100% (626)		
Negative	58.8% (197)	41.2% (138)	100% (335)		
Definitely negative	57.0% (49)	43.0% (37)	100% (86)		
Total	45.0% (547)	55.0% (669)	100% (1,216)		

Chi-squared test; HS, highly significant

Table 4: Association of child behavior and parenting style

Parenting style	Child behavior	B		Wald	Degree of freedom (df)	Significance	Odds ratio
		Slope coefficient	Standard error (SE)				
Authoritative	Definitely positive	1.411	0.486	8.435	1	0.004,S	4.102
	Positive	0.941	0.358	6.917	1	0.009,S	2.563
	Negative	-0.026	0.359	0.005	1	0.943	0.975
Authoritarian	Definitely positive	0.482	0.534	0.816	1	0.366	1.620
	Positive	0.160	0.393	0.165	1	0.684	1.173
	Negative	-0.192	0.394	0.237	1	0.626	0.826

Linear regression analysis; S, significant

Table 5: Association of caries experience, parenting style, and child behavior

	B		Wald	df	Significance	Odds ratio	95% confidence interval for odds ratio	
	slope coefficient	SE					Upper	Lower
Authoritative	0.083	0.207	0.161	1	0.689	1.086	0.725	1.629
Authoritarian	-0.376	0.233	2.61	1	0.106	0.687	0.435	1.083
Definitely positive	0.18	0.269	0.447	1	0.504	1.197	0.706	2.03
Positive	0.878	0.235	13.904	1	0.000, HS	2.406	1.517	3.818
Negative	-0.09	0.246	0.135	1	0.713	0.914	0.564	1.479

Linear regression analysis; HS, highly significant

parenting styles and a child's dental behavior.^{4,12} Paterson and Sanson also stated that parenting helps in predicting a child's behavioral development.¹³ On the contrary, Krikken et al. showed no association between parenting style and a child's dental behavior.¹⁴

The current study showed that children with authoritative parenting have less dental caries when compared to the other two parenting styles. This can be attributed to the fact that these parents discipline children with rational thinking and explain situations instead of demanding blind obedience. Similarly, Soh and Mahesh stated that good parenting practices help the child to have better oral hygiene as well as positive behavior while visiting the dental office.¹⁵

Children with authoritarian parenting style have more caries when compared to authoritative and permissive parenting styles. Howenstein et al. reported increased caries in children with authoritarian parenting, which is in accordance with the present study.⁴ Increased caries risk in this group contradicted the typical nature of authoritarian parenting style, which would suggest that oral health is not a priority to these families and also oral hygiene and diet measures are not reinforced in these households. If authoritarian parents can create strict rules, such as following a specific diet and brushing twice daily, then the children would abide by those rules.

Permissive parenting resulted in relatively more caries because of the indulgent parenting nature. Children in permissive households have an increased risk of caries due to the fact that they have the freedom to choose their diet and oral hygiene practices without any act of discipline. These parents have less control over their child's cariogenic food habits and oral hygiene maintenance.¹⁶

In the present study, children with definitely negative and negative behavior showed more caries as they have limited capacity to behave, which might have delayed the dental treatment. Children with definitely positive and positive behavior were associated with authoritative parenting and less prone to caries as these children know and understand that proper oral hygiene practices and consumption of a noncariogenic diet can benefit them.

Intergenerational differences are being noted in parenting styles where 21st century parents are less controlling, leading to problematic child behavior.¹⁷ The changes in parenting styles have an impact on the effectiveness of behavior management techniques.¹⁸ Pediatric dentists should identify different parenting styles and anticipate the child's behavior for effective dental treatment. This study emphasizes the sole responsibility of the pediatric dentist in creating awareness regarding good parenting styles for the well-being of the child since the cultivation of consistent positive desirable behavior and healthy eating habits in childhood begins only at home through effective parenting.

CONCLUSION

Children of authoritative parents demonstrated low caries experience and desirable behavior in the dental office. On the other

hand, children of permissive parents exhibited undesirable dental behavior, and children of authoritarian parents had high caries experience. Children with positive behavior experienced less caries compared to children with negative behavior.

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