

## Original Research

### Evaluate the association between parenting style and dental caries

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#### ABSTRACT:

**Introduction:** Childhood caries is a significant dental issue often influenced by parental behaviors and parenting styles. Understanding the association between parenting styles and a child's oral health, specifically the presence or absence of caries, is crucial for identifying risk factors and guiding preventive strategies. **Aim and Objectives:** The study aimed to: 1. Examine the relationship between parenting styles (authoritative, authoritarian, and permissive) and a child's oral health status, as determined by the presence or absence of caries. 2. Investigate potential relationships between sociodemographic data provided by parents and their parenting styles. **Methodology:** The study sample included children aged 4-8 years and their biological mothers who presented for their first dental visit at a specific dental clinic. A structured questionnaire containing sociodemographic details, parenting styles, and the child's oral health status was used. Parenting styles were classified as authoritative, authoritarian, or permissive. The oral health status was determined during a complete oral examination. **Results:** The sample consisted of 153 children, with varying sociodemographic characteristics, primarily represented by mothers with different education levels and households with one, two, or three children. Authoritative parenting was the most prevalent style (60.8%), followed by authoritarian (17.7%) and permissive (21.6%). Children of authoritative parents had lower rates of caries (48.4%) compared to authoritarian (77.8%) and permissive (81.8%) parenting styles. **Conclusion:** This study highlights the importance of parenting styles in influencing childhood dental caries. Authoritative parenting, characterized by a balanced approach, was associated with lower caries rates. Identifying and promoting effective parenting strategies may play a vital role in reducing caries prevalence among children, especially those at higher risk. This research emphasizes the role of pediatric dentists in educating parents about appropriate parenting styles to support positive oral health behaviors in children. However, the study's limitations, including the sample size and potential selection bias, should be considered in future research.

**Keywords:** Caries experience; Child behavior; Parenting style; Preschool children.

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#### INTRODUCTION

Childhood caries is a serious sociobehavioral and dental problem.<sup>1-2</sup> Children who exhibit unfavorable oral health habits are at a higher risk of developing dental caries in contrast to their counterparts who maintain positive habits.<sup>3-5</sup> The presence of carious lesion in the primary dentition increases the chances of caries development in the permanent dentition than those who are caries free in the primary dentition.<sup>6</sup> Socialization to health related behaviors, where child follow their parents, is a powerful way by which the healthy habit is cultivated during early years of their life. Therefore, early childhood is a crucial stage in which recognition and importance of health is laid.<sup>1</sup>

Established pattern pertaining to health-related behaviors acquired at childhood (e.g., fruit and vegetable intake, sugar-snacking, physical activity and oral hygiene) are hard to alter in later life. Parents decide which foods are available and in what quantity<sup>1-3</sup> their own eating behavior can serve as a role model.<sup>1,5</sup> and they can apply different food-related parenting practices that control, encourage, or restrict intake of certain foods.<sup>1,6-21</sup> The parents have a critical role in formation of these health-related definitive patterns which have a direct bearing on the development of childhood dental caries<sup>3,4</sup>. As in the etiology of dental caries diet and biology is well recognized, an intermediary process consequence of

parent handling requires pragmatic attention. Therefore, parenting styles are being given tremendous significance lately.

Baumrind's <sup>5</sup> three parenting styles (authoritative, authoritarian, and permissive) are frequently used in studies associated with parenting style. The authoritative parent is high in warmth and strive to direct and control the child's activities in a balanced and reasonable way. The authoritarian parent seeks to shape and control the behavior of the child with greater authority and easily get infuriated when the child misbehaves. Permissive parents, allows the child to control his own behavior as much as possible, avoids the exercise of control, and are high in warmth.<sup>6</sup> Today exploring the role of parenting in relation to caries development in children is of paramount importance, as it not only can help identify the population at greatest risk but also recognize specific unbound factors which may increase susceptibility to developing disease.

**AIM AND OBJECTIVES**

1. Examine the relationship between parenting styles: authoritative, permissive, and authoritarian, and the child's oral health, which will be determined by presence or absence of caries.
2. Investigate other possible relationships between sociodemographic data provided by the parents and parenting styles.

**METHODOLOGY**

**STUDY SAMPLE**

The sample was drawn from patient's presenting in Saraswati Dental College Lucknow for their first dental visit.

**INCLUSION CRITERIA**

- a) Those willing to participate
- b) Biological mother
- c) Mother whose child is greater than four years of age and less than nine years of age.

The oral health status was determined at the time of complete oral examination

The study utilized a self-administered structured questionnaire comprising 35 items. Sections I contained sociodemographic details such as gender of child, number of children in household and mother's highest completed level of education. Section II comprised of the parenting styles and dimensions questionnaire (PSDQ), which was used to determine parenting styles. The 32 Likert-scale items (5-point scale) on the questionnaire focused on parenting behaviors relating to interactions with their child. Higher scores showed a more frequent use of the described behavior. The choice of responses to each item was: never, once in awhile, about half of the time, very often, and always. The classification of each style was determined with the help of scoring guide developed for the instrument.<sup>6</sup> Those mothers who were illiterate, the investigator translated the questions into appropriate languages. The questionnaire was collected as soon as they were completed.

**STATISTICAL ANALYSIS**

Descriptive statistics were used to summaries the sample and practices.

**RESULT**

The sample consisted of 153 children 4-8 years of age and their mother as a primary caregiver.

**Table 1- Demographic Details**

Variables	n (%)
Sociodemographics	
Sex	
Girl	66 (43.1)
Boy	87(56.9)
Education level(mother)	
Illiterate	45(29.4)
Intermediate	27(17.6)
Graduation and beyond	81(52.9)
Number of children in household	
One	51(33.3)
Two	69(45.1)
Three	33(21.6)

The study sample consisted of 66 (43.1%) girls and 87 (56.9%) boys as shown in table 1. The education level of the mothers varied significantly. A total of 45 (29.4%) mothers were classified as illiterate, 27 (17.6%) had an intermediate level of education, and a majority of 81 (52.9%) had achieved graduation and beyond. This suggests a wide range of educational backgrounds among the mothers of the study participants. The households varied in terms of the number of children. One-child households accounted for 51 (33.3%) of the sample, two-child households for 69 (45.1%), and three-child households for 33 (21.6%). This distribution demonstrates a diverse representation of household sizes among the study participants.

**Table 2- Distribution of parenting style and child’s oral health status**

Parenting style	n (%)
Authoritative	93 (60.8)
Authoritarian	27(17.7)
Permissive	33(21.6)
Child’s oral health status	
Caries present	96(62.7)
Caries absent	57(37.3)

The distribution of parenting styles among the participants was as follows: 93 (60.8%) were categorized as authoritative, 27 (17.7%) as authoritarian, and 33 (21.6%) as permissive as shown in table 2. The most prevalent parenting style observed was authoritative, followed by permissive and authoritarian styles. In terms of the oral health status of the children, 96 (62.7%) had caries present, while 57 (37.3%) had caries absent. This indicates a higher prevalence of caries among the children in the study.

**Table 3- Comparison between parenting style and number of children**

Parenting style	n (%)	Number of children	n%
Authoritative	93 (60.8)	1	5(48.4)
		2	33(35.5)
		3	15(16.1)
Authoritarian	27(17.7)	1	nil (0)
		2	18(66.7)
		3	9(33.3)
Permissive	33(21.6)	1	6(18.2)
		2	18(54.5)
		3	9(27.3)

Parenting styles in the study predominantly featured authoritative (60.8%), followed by authoritarian (17.7%) and permissive (21.6%) styles as shown in table 3. Among authoritative parents, 48.4% had one child, 35.5% had two children, and 16.1% had three. Authoritarian parents primarily had two children (66.7%), while permissive parents showed a more balanced distribution with 18.2% having one child, 54.5% having two, and 27.3% having three children.

**Table 4- Comparison between parenting style and mother’s education**

Parenting style	N (%)	Mother’s education	n %
Authoritative	93 (60.8)	Illiterate	24(25.8)
		Intermediate	18(19.4)
		Graduation and above	51(54.9)
Authoritarian	27(17.7)	Illiterate	12(44.5)
		Intermediate	3 (11.1)
		Graduation and above	12(44.5)
Permissive	33(21.6)	Illiterate	9(27.7)
		Intermediate	6(18.2)
		Graduation and above	18(54.6)

Parenting styles were distributed as follows: authoritative (60.8%), authoritarian (17.7%), and permissive (21.6%) as shown in table 4. When considering mothers' education levels, authoritative parenting was most common among mothers with graduation and above (54.9%), while authoritarian parenting was evenly distributed among illiterate, intermediate, and graduation-educated mothers. Permissive parenting was prevalent among mothers with graduation and above (54.6%).

**Table 5- Comparison of parenting style with oral health status**

Parenting style	N (%)	Caries present n (%)	Caries absent n (%)
Authoritative	93 (60.8)	48(51.6)	45(48.4)
Authoritarian	27(17.7)	21(77.8)	6(22.2)
Permissive	33(21.6)	27(81.8)	6(18.2)

The data reveals the distribution of parenting styles and their association with the oral health status of children: Authoritative: This parenting style was adopted by 60.8% of participants. Among them,

51.6% had caries present, and 48.4% had caries absent. Authoritarian: This style was observed in 17.7% of cases. Of these, 77.8% had caries present, while 22.2% had caries absent. Permissive: 21.6% of

participants followed this parenting style. Among them, 81.8% had caries present, and 18.2% had caries absent. The results indicate varying associations between parenting styles and the oral health status of children, providing valuable insights into potential relationships for further investigation.

## DISCUSSION

This is one of the first studies to examine the relation between parenting styles and caries. Our findings suggest that parenting style does have an association with the child's caries presence. In this study, parenting practices were considered when caries has already been developed, presuming that the parenting style does not transform a great deal over time and are temporally stable.<sup>7</sup>

Authoritative parent's children showed lower caries. This is consistent with Howenstein et al's findings.<sup>8</sup> Children of these parents cultivate good oral habits as their parents become role models.

Presence of increased caries were observed with authoritarian group. No say whatsoever on the choice of food may have a negative impact in which increased inclination to restricted food or aversion for healthy diet is observed. This result also implies that these families do not consider oral health as a priority. These findings could be due to sample representing authoritarian households was limited.

Viswanath S, Asokan S et al showed permissive parenting was linked to a fourfold rise in negative dental behavior in children, while authoritarian parenting was associated with a twofold increase in negative behaviors, as compared to authoritative parenting. Both authoritative and authoritarian parenting styles were correlated with lower levels of tooth decay in children, with permissive parenting resulting in a threefold increase in tooth decay compared to authoritative parenting.<sup>9</sup>

The increased caries in permissive parenting could be ascribed to the fact the child is so independent that food choice is left to his own will and no enforcement for maintenance of oral hygiene at home is present. On the contrary, Krikken et al. showed no association between parenting style and a child's dental behavior.<sup>10</sup>

Aleksejuniene and Brukiene<sup>11</sup> and Seow et al<sup>12</sup> were unable to demonstrate an association between specific parenting styles and children's caries experience. The above-mentioned findings could be explained by what Law<sup>12-15</sup> understood.

Quek SJ, Sim YF et al showed authoritative parenting was linked to favorable attitudes regarding both preventive dietary and oral hygiene practices. Children with authoritative parents exhibited more ideal oral hygiene practices, although parenting styles did not have any influence on actual dietary habits.<sup>16</sup>

The permissive parenting style led to a higher prevalence of caries due to its indulgent nature. Children in permissive households face an elevated risk of caries because they are allowed the freedom to

make dietary and oral hygiene choices without parental discipline. These parents exert less control over their children's consumption of cariogenic foods and their oral hygiene routines.<sup>17</sup>

The recent research findings indicate that children raised by authoritative parents experience fewer instances of dental caries in comparison to those with different parenting styles. This difference can be linked to the approach of authoritative parents, who employ reasoned discipline and provide explanations in contrast to simply insisting on unquestioning compliance. Likewise, as highlighted by Soh and Mahesh<sup>18</sup>, effective parenting techniques contribute to improved oral hygiene in children and cultivate positive behavior during dental appointments.

There has been evidence of change in society from a more disciplined towards permissive parenting style where the parent does not define limits for the children nor cause or see them in distress. This shift in parenting is of grave concern where the child's behavior and oral health is concerned.

Caries, the most frequent oral disease, are preventable with the adoption of effective interventions in the individual's lifestyle and habits. Unfortunately, the power of traditional health and education is limited regarding pediatric oral care, and has sometimes failed to change health behavior.

Intergenerational variances in parenting styles are becoming evident, with contemporary parents in the 21st century tending to be less controlling, which can contribute to challenging behavior in children.<sup>19-20</sup> These shifts in parenting styles have ramifications for the efficacy of behavior management methods. Consequently, pediatric dentists should be able to recognize various parenting styles and anticipate the potential impact on a child's behavior to ensure effective dental treatment.

This study underscores the unique role of pediatric dentists in raising awareness about effective parenting styles for the benefit of a child. It emphasizes that the establishment of consistent, positive, and desirable behavior, as well as the promotion of healthy eating habits during childhood, primarily starts at home through effective parenting.

The findings of this study must be considered in the context of its limitations. It was a convenience sample of patients presenting to one dental clinic. Also, the sample was small and another limitation was the potential selection bias: there were mostly authoritative parents. The higher percentage of authoritative parents could be explained by the fact that mostly authoritative parents bring their children to the dentist compared to the other parenting styles. This would be an interesting topic to research further.

## CONCLUSION

1. Authoritative parenting was the most prevalent parenting style in the present study

2. Authoritative parenting was associated with less caries whereas authoritarian and permissive parenting was associated with more caries

The important influence of parents on childhood dental caries suggests that formulating health promotion strategies that can intervene at this level will further reduce caries levels in children, especially in those at higher risk

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