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Research Article

Parenting Styles and Dental Caries among Preschool Children in a Coastal Area of Jember, Indonesia

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Abstract

Dental caries is a multifactorial condition affected by behavioral factors. Parenting styles reflect different behavior influenced by cultural and socioeconomic backgrounds. Coastal areas have unique cultural and socioeconomic conditions and underlie the community's upbringing behavior. This study aims to determine the differences in preschool children's caries experience based on parenting patterns in a coastal area. This research is a cross-sectional study on children and their parents in the coastal area of Puger, Jember, East Java, Indonesia. The participants were 269 pairs of preschool children and parents selected by random cluster sampling. The dependent variable was dental caries experience measured using the def-t index. The independent variable was the type of parenting categorized into three groups (authoritative, authoritarian, permissive) based on a questionnaire distributed to parents. The Kruskal-Wallis test was applied to determine the difference in caries rates in each parenting style ($p \leq 0.05$). The results showed that the prevalence of primary teeth caries was 97%, and the mean of def-t was 10.03. Authoritative parenting style was the majority (81.8%), and no statistically significant difference was found between caries and parenting style (p=0.473). However, the mean of def-t in the authoritarian group was higher than in others (10.42). Based on the result, it can be concluded that the mean of dental caries among children in a coastal area with authoritarian parents was the highest compared to others, but the difference was statistically insignificant.

Keywords: coastal area; dental caries; parenting style

INTRODUCTION

Dental caries are the most common oral health problem globally. The Global Burden of Disease Study in 2019 showed that around 520 million children around the globe experienced caries of primary teeth.[1] The prevalence of oral health problems continues to increase in most low and middle-income countries due to changes in living conditions and growing urbanization.[1] In Indonesia, the prevalence of dental caries in 2018 was 81.8% among children 3-4 years and 92.6% among children 5-9 years old.[2]

Studies found that behavioral factors were found to be related to caries in children.[3,4] Parents play an important role in shaping children's oral health behavior. Parents' oral health attitudes and practices were related to children's oral health status.[5,6] Moreover, oral health condition at an early age was related to oral health condition later in life.[7] Therefore, promoting oral health behavior at an early age is important to improve quality of life.[6]

Children's oral health behavior is affected by how children are nurtured at home. Parenting styles have been divided into three categories, namely, authoritarian, permissive, and authoritative.[8] The authoritarian parenting style shows high control and is less friendly in interacting

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with the child. The permissive parenting style showed non-responsive and non-controlling and made few demands on their child. The authoritative parenting style showed controlling but also receptive and warm to the child.[8]

According to Bronfenbreener (1979), parenting styles can be influenced by culture, ethnicity, and socioeconomic status.[9] Coastal communities may have a distinctive parenting style influenced by local culture. The local coastal population is less able to process natural resources than the outsiders, so they mostly work as fishing laborers.[10] The poverty causes many coastal parents to marry off their daughters at younger ages. Most of the girls are still teenagers, and they may be unable to continue their education or find a decent occupation.[11] Parents learn from the local culture about the role they must play in raising their children.[11]

Based on the background, this study aims to analyze the difference in caries experience in primary teeth among preschool children based on parenting styles in the coastal area of Puger, Jember, Indonesia.

MATERIALS AND METHODS

This cross-sectional study examined preschool children and their parents in the coastal area of Puger, Jember, Indonesia. The coastal area of Puger is located in two villages, namely Puger Kulon and Puger Wetan. Ethical approval was given by The Ethical Committee of Medical Research Faculty of Dentistry Universitas Jember No. 238/UN.25.8/KEPK/DL/2019. Written consent was obtained from every child's parent or caregiver.

This study randomly sampled children enrolling at preschools in the Puger Kulon and Puger Wetan. There were 16 preschools in these villages with a total of 780 students. The sample size was calculated with a 95% confidence interval and a 5% margin of error. The minimum sample size needed was 258 preschool children. Preschools as the cluster were randomly selected from this area. All the eligible students from the selected schools were included in this study.

The inclusion criteria for this study were children aged 4-6 years and parents' consent for involvement in the study. The exclusion criterion was uncooperative children for clinical examination. Nine preschools with 269 pairs of student-parents participated in this study.

Data on caries were collected through children's clinical examinations and a set of questions administered to mothers or caregivers. The clinical examination was performed with artificial light, a mouth mirror, a dental explorer, and relative isolation. The questionnaire consisted of a section on the sociodemographic characteristic of the parents and a section on parenting styles.

The dependent variable in this study was the experience of dental caries in primary teeth, which was measured using the decay-exfoliated-filling (def-t) index. The independent variable was the parenting styles given to the mother or caregiver. The questionnaire on parenting styles consisted of 25 questions on parents' attitudes and practices regarding children's upbringing. The questions were multiple-choice questions with three choices. The choices indicated different categories for parenting styles. Participants' parenting style was categorized based on most answers to all questions. The researchers also conducted a pilot study in a preschool with 30 children involved to ensure the validity and reliability of the instruments.

Data analysis was performed using SPSS version 25. Children and parents with missing data were excluded from the analysis. A *Kruskal-Wallis* test was used to determine the difference in the average ef-t scores for every parenting style. The level of significance for the test was ≤ 0.05.

RESULT

A total of 269 children participated in this study, consisting of 127 males and 142 females, as shown in Table 1. The

children's age in this study was mostly 6 years old (60.6%), and the majority were Javanese (95.9%). Most children had mothers with a primary level of education (41.6%) and lived with a family income of less than 1.5 million Indonesia Rupiah per month (69.5%).In this study, mothers were mostly housewives (90.7%).

Table 1. Sociodemographic Characteristics of Respondents

No	Characteristics	N	(%)
1	Gender		
	a. Male	127	47.4%
	b. Female	142	52.6%
2	Age		
	a. 4 years	9	3.3%
	b. 5 years	97	36.1%
	c. 6 years	163	60.6%
3	Ethnicity		
	a. Javanese	258	95.9%
	b. Madurese	11	4.1%
4	Mother's Education		
	a. ≤ Primary	112	41.6%
	b. Junior high school	110	40.9%
	c. Senior high School	43	16.0%
	d. Higher edu	4	1.5%
6	Mother's Occupation		
	a. Housewives	244	90.7%
	b. Self employee	18	6.7%
	c. Employee	7	2.6%
7	Family Income/Month (IDR)		
	a. < 1.5 Million	187	69.5%
	b. 1.5– 2.49 Million	67	24.9%
	c. 2.5– 3.49 Millon	10	3.7%
	d. > Rp3.49 Million	5	1.9%
	Total	269	100%

The prevalence of caries in primary teeth in this study was 97.0%, and the mean def-t score was 10.05 (standard deviation (SD)=4.68). As presented in Table 3, there were no significant differences between the three parenting styles regarding def-t score (p=0.473). The mean def-t score in the permissive group was 8.74, the lowest among all groups. In the authoritarian group, the def-t score was 10.42, the highest compared to the other groups.

Table 3. Distribution of def-t according to Parenting Style

No	Parenting Style	N	def-t score	*P*
1	Authoritative	220	10,14	
2	Authoritarian	26	10.42	0.473
3	Permissive	23	8.74	
	Total	269		

DISCUSSION

The prevalence of caries in primary teeth (97%) and the mean def-t score were high in this study (10.05). Previous studies in coastal children aged 5-11 in Pakistan showed a lower prevalence at 70.8%[12]. Furthermore, a study using def-t index conducted on 6-year-old coastal children in Makasar, Indonesia, was 5.6.[13]

The association of parenting style with caries of primary teeth could not be determined in this study due to the insignificant difference in def-t scores between all three parenting groups. Insignificant differences in caries status in parenting styles were also found in a study of 4-6-year-old children in Korea.[14]

This study revealed that the highest mean of the def-t index was among the authoritarian parents. Previous studies demonstrated that the authoritarian parenting styles that were coercive and oppressive did not help to improve children's oral health.[14,15] In this present study, in the children of permissive parents, the def-t index was lower compared to the other groups. However, a study in Korea reported that the children's caries were lower in authoritative parenting styles.[14] This different finding may be related to the different cultures of the study population.

Dental caries in children are associated with many factors, including oral health-related behavior, socioeconomic status, ethnicity, and birth order.[16] Even though the importance of parenting styles in children was undervalued compared to these factors, oral health service providers should play a role in identifying and guiding the parenting

style in the community health centers or any dental office.

In terms of the limitation of this study, since the questionnaire was self-reported, the parents might provide false answers or be unfaithful when answering questions. Therefore, the distribution of parenting styles might be biased toward one side of the parenting style. In future studies, in-depth interviews can be added as instruments to access parenting styles.

CONCLUSION

Based on the result of this study, it can be concluded that this study found no statistical difference between dental caries in primary teeth and parenting styles. Authoritarian parenting style showed the highest def-t index among all groups.

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