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ORIGINAL ARTICLE

Relationship of parental occupation, income, and education with children's oral health: A study of sixth-grade students at SD 060847 Sekip, Medan

Molek[1,2*], Gusbakti[2,3], Nayla Khairani[4], Reza Sembiring[4]

ABSTRACT

Background: Oral health in elementary school–aged children is an important component of general health that affects quality of life and the growth and developmental process. Poor oral hygiene in children remains common and is influenced by various factors, including parental socioeconomic conditions. This study aimed to determine the relationship between parental socioeconomic factors, including occupation, income, and education level, and the oral health of sixth-grade students at SD Negeri 060847.
Methods: This analytic survey used a cross-sectional design. The study population comprised all students at SD Negeri 060847, and the sample consisted of 43 sixth-grade students selected using a total sampling technique. Data on parental socioeconomic status were obtained through questionnaires, and children's oral health status was assessed using the Oral Hygiene Index Simplified (OHI-S) through direct examination. Data were analyzed using univariate and bivariate methods with the chi-square test. Most children had a moderate OHI-S status.
Results: There was a significant relationship between parental occupation and children's OHI-S status, with children whose parents had higher-level occupations tending to have better oral hygiene. Parental income also showed a significant relationship with OHI-S status, with higher income associated with better oral hygiene. In addition, parental education level was significantly associated with children's oral health.
Conclusion: In conclusion, parental socioeconomic factors are significantly associated with the oral health of sixth-grade students at SD Negeri 060847.

Keywords: children's oral health, occupation, income, education, OHI-S

Introduction

Oral health is an integral part of general health and plays an important role in supporting children's quality of life. At the elementary school age, good oral health is required to support growth and development, learning activities, and social interaction.[1] Oral health problems can cause pain, difficulty chewing, speech disturbances, and reduced concentration and academic performance, and if not treated early, may have long-term effects on health into adulthood.[2,3] Oral health problems in children remain an important public health concern at both global and national levels. The World Health Organization reports that oral diseases are

Affiliation
[1]Department of Dental Science, Universitas Prima Indonesia
[2]Center of Excellence for Phyto Degenerative & Lifestyle Medicine, Universitas Prima Indonesia
[3]Department of Clinical Medicine, Universitas Prima Indonesia
[4]Undergraduate Program in Dental Science, Universitas Prima Indonesia

***Corespondence:**
drg.molek@yahoo.com

among the most prevalent noncommunicable diseases in children and adolescents. In Indonesia, several studies have shown that oral hygiene among school-aged children is still in the moderate to poor category, indicating that promotive and preventive oral health efforts have not yet been optimal.[4–6] One indicator used to assess oral hygiene is the Oral Hygiene Index Simplified (OHI-S), which describes oral cleanliness based on the presence of debris and calculus on tooth surfaces. Poor OHI-S scores reflect low levels of oral health maintenance behavior and may increase the risk of dental caries and periodontal disease.[7,8]

Elementary school children, particularly those aged 10 to 12 years, are a vulnerable group for oral hygiene problems because they are not yet fully independent in maintaining their oral health.[9] Children in this age group still require parental guidance and supervision in establishing proper and regular toothbrushing habits. Inadequate toothbrushing practices, high consumption of sugary foods, and infrequent dental visits contribute to poor oral hygiene in children.[10] Parents play a crucial role in shaping children's oral health behaviors. Parental socioeconomic factors, such as occupation, income, and education level, influence their ability to provide oral hygiene supplies, access health services, and deliver health education to their children.[11] Parents with higher education and income levels tend to have better knowledge and awareness of the importance of oral health and the implementation of healthy behaviors.[12] Several studies have reported that children from families with low socioeconomic status tend to have poorer oral hygiene compared with those from higher socioeconomic backgrounds.[9,11,13] However, findings regarding the relationship between parental socioeconomic factors and children's oral health vary across regions. Therefore, this study aimed to analyze the relationship between parental occupation, income, and education level and the oral health of sixth-grade students at SD Negeri 060847.

Method

This study was an analytic survey with a cross-sectional design that aimed to analyze the relationship between parental occupation, income, and education level and children's oral health. The study was conducted at SD Negeri 060847 Medan in November 2025. The study population included all 250 students enrolled at SD Negeri 060847, and the sample consisted of 43 sixth-grade students who met the inclusion and exclusion criteria, selected using a total sampling technique.

Parental socioeconomic data, including occupation, income, and education level, were collected using questionnaires completed by the parents. Parental occupation was categorized as high, moderate, or low. Parental income was categorized as low, moderate, high, or very high. Parental education level was categorized as low, medium, or high. Children's oral health status was assessed through direct examination using the Oral Hygiene Index Simplified (OHI-S). Examinations were conducted on six index teeth using standard diagnostic instruments according to oral health examination procedures. The resulting OHI-S scores were categorized as good, moderate, or poor.

Data were analyzed univariately to describe respondent characteristics and bivariately to examine relationships between independent and dependent variables. Bivariate analysis was performed using the chi-square test with a significance level of 0.05. The results are presented in tables and narrative form.

Results

Table 1 presents the statistical analysis of the association between three parental socioeconomic indicators (occupation, income, and education) and the subjects' Oral Hygiene Index-Simplified (OHI-S) status. The OHI-S status is categorized as good, fair, or poor. All three variables showed a statistically significant association with OHI-S status ($p < 0.05$ for each).

Parental occupation yielded a p-value of 0.033. Subjects with parents in the high occupation category had 60.0% good OHI-S status and 40.0% fair status. The medium occupation group had 55.0% fair status, whereas the low occupation group had the highest poor status prevalence at 46.2% and only 23.1% good status. Parental income showed a significant association with OHI-S status ($p = 0.015$). The low income group had the highest poor status at 63.6% and only 9.1% good status. Higher income groups had increased good status frequencies; the high income group had 0.0% poor status, and the very high income group had 54.5% good status. Parental education demonstrated a significant association with OHI-S status ($p = 0.017$). Subjects with parents in the low education category had 66.7% poor status and 0.0% good status. The medium education group had 50.0% fair status, whereas the high education group had 53.3% good status and only 6.7% poor status.

Table 1. Relationship of parental occupation, income, and education with OHI-S

Variable	OHI-S Status				p-value
	Good f (%)	Fair f (%)	Poor f (%)	Total f (%)	
Occupation					
High	6 (60.0)	4 (40.0)	0 (0.0)	10 (100.0)	0.033
Medium	3 (15.0)	11 (55.0)	6 (30.0)	20 (100.0)	
Low	3 (23.1)	4 (30.8)	6 (46.2)	13 (100.0)	
Income					
Low	1 (9.1)	3 (27.3)	7 (63.6)	11 (100.0)	
Medium	2 (14.3)	8 (57.1)	4 (28.6)	14 (100.0)	0.015
High	3 (42.9)	4 (57.1)	0 (0.0)	7 (100.0)	
Very high	6 (54.5)	4 (36.4)	1 (9.1)	11 (100.0)	
Education					
Low	0 (0.0)	2 (33.3)	4 (66.7)	6 (100.0)	0.017
Medium	4 (18.2)	11 (50.0)	7 (31.8)	22 (100.0)	
High	8 (53.3)	6 (40.0)	1 (6.7)	15 (100.0)	

Discussion

This study showed that parental socioeconomic factors, including occupation, income, and education level, were significantly associated with the oral health of sixth-grade students at SD Negeri 060847 based on OHI-S. These findings indicate that family socioeconomic conditions play an important role in shaping oral health maintenance behaviors among elementary school–aged children. Favorable socioeconomic conditions allow parents to provide attention, supervision, and support for healthy habits, including maintaining oral hygiene.[11]

Parental occupation showed a significant relationship with children's oral hygiene status. Children from families with high-level occupations mostly had good OHI-S status, whereas those from families with low-level occupations had a higher proportion of poor OHI-S status. This condition may be related to economic stability and more structured parenting patterns among parents with better occupations. Parents with stable jobs are more likely to provide adequate oral hygiene supplies, such as appropriate toothbrushes and toothpaste, and to allocate time to guide and supervise their children's oral hygiene practices. These findings are consistent with Pontoluli et al.[14] who reported that family socioeconomic conditions are associated with oral hygiene status in elementary school children.

Parental income was also significantly associated with children's oral health. Children from low-income families were more likely to have poor OHI-S status, whereas those from high and very high income families tended to have better oral hygiene. Adequate income enables parents to meet children's oral health care needs, including purchasing oral hygiene products and accessing dental services. In contrast, limited income may hinder efforts to maintain children's oral health and increase the risk of oral health problems. These findings are in line with the study by Fadiyah et al.[15] which showed that parental socioeconomic status is associated with oral hygiene among elementary school children based on OHI-S.

Parental education level was another important factor associated with children's oral health. Children whose parents had a high education level mostly had good OHI-S status, whereas those whose parents had a low education level more frequently had poor OHI-S status. Parental education contributes to knowledge and awareness regarding the importance of oral hygiene and its maintenance. Parents with higher education levels are more likely to understand health information, provide oral health education to their children, and serve as role models for healthy behaviors. These findings are consistent with Zulkarnain et al.[12] who reported a relationship between parental education level and children's oral hygiene status.

In this study, most children had moderate OHI-S status. This finding suggests that children's oral hygiene was not optimal, although not yet in a very poor category. This condition may be influenced by toothbrushing habits that are not performed correctly and consistently, as well as infrequent routine dental visits. Elementary school–aged children still need parental support to establish proper toothbrushing habits. Anwar et al.[5] reported that most elementary school children had moderate oral hygiene status due to suboptimal oral health maintenance behaviors.

Support from schools and health professionals is also important for improving children's oral health. Promotive and preventive programs, such as oral health education and periodic dental examinations, can help increase awareness among children and parents about the importance of maintaining oral hygiene from

an early age. Theresia et al.[16] stated that parental and school involvement is essential in establishing healthy behaviors in school-aged children.

This study has several limitations. The cross-sectional design does not allow direct conclusions regarding causality, and the relatively small sample size limits the generalizability of the findings. However, the study provides a clear description of the influence of parental socioeconomic factors on children's oral health and can serve as a basis for planning promotive and preventive oral health programs for elementary school children.

Conclusion

Parental socioeconomic factors, including occupation, income, and education level, are significantly associated with the oral health of sixth-grade students at SD Negeri 060847, in accordance with the study objectives. Most students had parents with moderate occupational status, and most students had moderate oral hygiene status based on OHI-S. The analysis showed that parental occupation ($p = 0.033$), income ($p = 0.015$), and education level ($p = 0.017$) were significantly associated with students' oral hygiene status, with higher levels of occupation, income, and education associated with better oral health. These findings reinforce the important role of parents in shaping oral health maintenance behaviors among elementary school–aged children. Parents are encouraged to increase attention to and supervision of their children's oral hygiene practices. Schools are advised to strengthen oral health education programs through school dental health services (UKGS), and health professionals should actively participate in promotive and preventive efforts. Future studies are recommended to use different study designs and larger sample sizes to obtain more comprehensive results.

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