

Knowledge of Oral and Dental Health Impacts the Oral Hygiene Index Simplified (OHI-S) of Primary School Children

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Abstract

Primary school children are a vulnerable group to oral and dental diseases. Less of knowledge on dental health will lead to bad dental and oral hygiene status resulting in debris and calculus. The OHI-S is an ideal dental and oral hygiene check tool for assessing the oral hygiene of primary school children. This study aims to analyze the relationship of knowledge of dental and oral health to Oral Hygiene Index Simplified in elementary school children. Method: this type of analytic observational study with cross sectional design. The research was conducted on the research carried out in class III students of SDN Perigi 03 Pondok Aren, South Tangerang City. Data collection with a questionnaire on dental health knowledge and Oral Hygiene Index Simplified. Data analysis using Chi-Square. Result: Knowledge of oral health to Oral Hygiene Index Simplified indicates that the p-value 0.023 ($p < 0.05$). Conclusion: there is a significant relationship between knowledge of dental and oral health to Oral Hygiene Index Simplified in primary school children

Keywords: Knowledge, oral health, oral hygiene index simplified

Introduction

Oral and dental health is a part of body health that cannot be separated from one another because oral health will affect the health of the body. Maintenance of oral hygiene is an effort to improve oral health. The role of the oral cavity is very large for human health and well-being. In general, a person is said to be healthy, not only in a healthy body but also in the oral cavity and teeth. Therefore, oral health plays a very important role in supporting the health of one's body. Dental and oral health issues are an important concern in health development, one of which is the vulnerability of school-age children to dental health problems.¹⁻⁵

Several studies in Indonesia prove that the dental and oral hygiene status of elementary school children is

in the poor category. Among them, Alhandaet approved that the dental and oral hygiene status of students in the 12-year-old SDN Bukittinggi City was included in the medium category with an OHIS average of 1.52; Research by Mawuntu et al approved the OHI-S index in St. Catholic Elementary School children Agustinus Kawangkoan 60% medium category.^{6,7}

In other countries it also shows that the dental and oral hygiene status of elementary school children is in the moderate category. This is evidenced Denloye cit. Yohanes et al in Nigeria on children aged 13-15 years as outlined in his journals proved that the Debris Index (DI) was 1.57 and the Calculus Index (CI) was 1.48 with an average Oral Hygiene Index Status (OHI-S). for men reaching 3.09 and for women reaching 2.94 which is classified as mild to moderate.⁸ From the research above, it can be concluded in Indonesia and in the world, it shows that school-age children maintain their oral health and have poor oral hygiene status.

One of the main factors affecting oral and dental hygiene is behavior. Behavior that can influence the

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development of caries is about how to maintain healthy teeth and mouth and behavior is strongly influenced by knowledge. Behavior based on correct knowledge will last longer than behavior without knowledge, including knowledge about how to maintain proper dental health will greatly affect the incidence of caries.^{6,9}

This is evidenced by the results of research by Sari et al. (2015) showing that knowledge of oral health is related to the oral hygiene index, where the better the level of knowledge, the better the OHI-S index. Another study, Yohanes et al. (2013) showed that children who had good knowledge had a 2.2 times chance of having good oral and dental hygiene status.^{8,10}

Children 6 to 12 years of age, at this stage, they often show the best in their lives, so dental health for them is one of the things that can motivate learning. This is of course every child’s dream, sometimes they feel embarrassed when a friend taunts them because their teeth are yellow. So at this time, the sense of responsibility for schoolwork and homework will be more visible. Therefore, children can be taught how to maintain oral health in more detail so that it will create a sense of responsibility for their own hygiene.^{11,12}

Method

This research is an analytic observational study with a cross-sectional design. The research was conducted in third grade students of SDN Perigi 03 PondokAren, South Tangerang City. The research sample was taken by total sampling technique, namely as many as 51 respondents. The independent variable in this study was knowledge of dental health and the dependent variable was the dental hygiene status of elementary school children (OHI-S).

Data collection on dental health knowledge was measured using a questionnaire containing 15 questions about knowledge of dental health, while dental hygiene status was measured by standard dental

hygiene checks for primary school children, namely Oral Hygiene Index Simplified (OHI-S). The stages of data collection activities were carried out in 3 stages: first the respondents were asked to sign an informed consent. The second provides a questionnaire about dental health knowledge.

The third performs an OHI-S index examination by applying a disclosing solution using a cotton pellet on the index tooth if there is staining on the tooth it means that there is debris on the tooth and if at the time the tooth is examined using a sonde and there is a rough surface it shows the tooth. there’s calculus. Then the results of the examination are recorded on the examination sheet.

Data analysis was performed using the SPSS statistical program for univariate analysis and presented in the form of a frequency distribution. After that was done bivariate analysis with chi-square to measure the relationship of dental health knowledge with the Simplified Oral Hygiene Index in primary school children.

Result

Table 1. Frequency distribution of dental and oral health knowledge

No.	Knowledge	N	Percentage (%)
1	Good	11	21.6
2	Enough	27	52.9
3	Less	13	25.5
	Total	51	100

Table 1 shows that respondents have good knowledge criteria of 11 children (21.6%), 27 children (52.9%) have enough knowledge criteria, and 13 children (25.5%) are categorized as less of knowledge.

Table 2. Frequency distribution of Oral Hygiene Index Simplified

No.	OHI-S	N	Percentage (%)
1	Good (0.0 - 1.2)	9	17.6
2	Moderate (1.3 - 3.0)	40	78.4
3	Bad (3.1 - 6.0)	2	4
	Total	30	100

Table 2 Table 2 shows that respondents who have a score range of 0.0 to 1.2 with good criteria are 9 children (17.6%), respondents who have scores in the range 1.3 to 3.0 are 40 children (78.4%) including moderate criteria, and in the range of scores of 3.1 to 6.0 a number of 2 children (4%) are considered bad criteria.

Table 3. Results of the chi-square analysis of dental health knowledge with Oral Hygiene Index Simplified

Knowledge	Oral Hygiene Index Simplified						Total		p value
	Good		Moderate		Bad				
	N	%	N	%	N	%	N	%	
Good	1	9.1	10	90.9	0	0	11	100	0.023
Enough	8	29.6	19	70.4	0	0	27	100	
Less	0	0	11	84.6	2	15.4	13	100	
Total	9	17.6	40	78.4	2	3.9	51	100	

Table 3 results of the chi-square analysis of dental health knowledge against Oral Hygiene Index Simplified indicates that the p-value is 0.023 ($p < 0.05$), which means that there is a significant relationship between knowledge of dental health and Oral Hygiene Index Simplified

Discussion

The results of the research data were obtained respondents 11 children (21.6%) had good dental health knowledge, 27 children (52.9%) had enough

knowledge and 13 children (25.5%) had less knowledge. Knowledge is a very important domain for the formation of one's actions. Knowledge of dental and oral health is very important for the formation of actions to maintain dental and oral hygiene. Maintaining dental hygiene is one way to improve dental health.^{11,13} The results of this study are not much different from the results of research by Restuastuti et al regarding knowledge and behavior of dental health among students of SDN 174 Muara Fajar Pekanbaru, it is known that 25 students (41%) have insufficient knowledge of dental health and as many as

25 students (41 %) have bad behavior regarding brushing their teeth.¹⁴

The results of the research data showed that respondents who had good OHI-S criteria were 9 children (17.6%), respondents who had moderate OHI-S criteria were 40 children (78.4%) and a number of 2 children (4%) had OHI- S bad criteria. This is possible due to the less of knowledge of dental health maintenance, so with relevant research. Research by Mawuntu et al on the description of the dental hygiene status of St. Catholic Elementary School students. Agustinus Kawangkoan. Obtained from 65 children who were examined using the OHI-S index showed that 37% of respondents were in the good category; 60% moderate category; and 3% bad category.⁷

The result research about dental health knowledge against Oral Hygiene Index Simplified indicates that the p-value is 0.023 ($p < 0.05$), which means that there is a significant relationship between knowledge of dental health and dental health Oral Hygiene Index Simplified. The results of this study agree with the research. This is evidenced by the results of research by Sari et al. showing that knowledge of oral health is related to the oral hygiene index. Another study, Yohanes et al. also stated that it showed knowledge of dental and oral health was related to the oral hygiene index of children.^{8,10}

Knowledge of oral and dental health is formed from a person's behavior. Other studies also show a correlation between knowledge and oral health behavior. Remembering the magnitude of the influence of behavior on the degree of dental and oral health, a special approach is needed in shaping positive behavior towards dental health. A positive attitude will affect the intention to participate in activities related to this and a person's attitude is closely related to the knowledge he / she receives, especially dental health. Knowledge is the basis for the formation of a behavior. A person is said to be less knowledgeable if he is in a state of being unable to recognize and explain and analyze a situation. If the level of knowledge is higher.^{11,13,15}

Conclusion

Based on the research results, it can be concluded that there is a significant relationship ($p < 0.023$) between knowledge of dental health and Oral Hygiene Index Simplified

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Ethical Clearance: All participants were signed the informed consent prior to the data collection.

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