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CORRELATION BEHAVIOR OF MANTAINING ORAL AND DENTAL HEALTH AND ENVIRONMENTAL FACTORS WITH DENTAL CARIES IN 11-12 YEARS OLD CHILDREN IN SD NEGERI 1 AND MI NEGERI KALIKURMO BRINGIN SUBDISTRICT

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ABSTRACT

Background: Oral and dental health problems in Indonesia still occur a lot. Poor oral and dental health will impact the individual by causing pain, reducing quality of life and decrease individual productivity. Caries is serious oral and dental health problem in society, therefore it needs attention and involvement from all parties to overcome it. Environmental factors are very important in maintaining oral and dental health and teaching healthy living behaviors. **Objective:** To determine the correlation behavior of maintaining oral and dental health and environmental factors with caries incidence in 11-12 years old children in Bringin Subdistrict. **Methods:** This study was an analytic observational study with cross sectional study approach. This research sample method using total sampling method. The sample used is all members of the population as many as 60 research subjects. This study consist of 4 assessment factors, there are the consumption level of cariogenic foods, tooth brushing habits, parents income level, and parents education. The results of this study are the scores of these four factors and the DMF-t index. Before participating In this research, subjects were asked to fill out a questionnaire and informed consent. Examination performed by using a sonde and mirror mouth. **Results:** There was a correlation on the results of chi square test on the level of education and cariogenic food consumption with caries status in 11-12 years old children in Bringin Subdistrict. $P = 0.001$ ($P < 0.05$). **Conclusion:** There is a correlation on behavior of maintaining oral and dental health and environmental factors with dental caries in 11-12 years old children in SD 1 and MI N Kalikurmo, Bringin Subdistrict.

Keywords: Maintaining oral and dental health, environmental factors, dental caries.

INTRODUCTIONS

Caries is one of the causes of oral dental health problems that occur a lot in communities.¹ Caries is a multifactorial disease that influenced by bacteria, host tissue, substrate and time, where bacteria are the main cause.² Streptococcus mutans is the most dominant caries-causing bacteria. Streptococcus mutans can synthesize acids from sugar rapidly and produce polysaccharides. Streptococcus mutans produces polysaccharides especially from sucrose, so that facilitating early colonization and causing plaque formation³.

The number of oral and dental health problems in Indonesia is very high, according to the Riset Kesehatan Dasar (RISKESDAS) in 2018, number of oral dental health problems is quite high, about 57.6%, Central Java province is one of the provinces with a very high level of caries / cavities, about 43.4%.⁴

The high incidens of caries in 6-12 years old children who are categorized as school

age is due to the snacking habbit on food and drinks they want, and majority food and drinks consumed are contain high sugar^{5,15}. This should be a concern because at this age the child is having mixed teeth period. Permanent teeth that just emerged are more susceptible to caries because the structure of the mixed teeth is still developing so the risk of caries in school-age children is very high.⁶

The high incidence of caries in school age children can be overcome by prevention and treatment.⁷ One of the effective efforts to reduce this is introducing and teaching of healthy living behavior by teaching children to always brush their teeth regularly two times a day and introducing them to environmental factors for clean and healthy teeth.⁸

According to this, it is necessary to conduct research on correlation maintaining behavior of oral and dental health and environmental factors with dental caries in 11-



12 years old children at SD 1 and MI N Kalikurmo, Bringin Subdistrict.

RESPONDENTS AND DESIGN METHODS

This study is an observational study with cross sectional design that has been implemented in the Bringin Subdistrict, Semarang Regency.

Respondents

This study respondent as many as 60 people, different target sample included in this study was caused by that area had only 2 elementary schools with very few students. Sample should be fulfill the requirement of inclusion criteria and has no exclusion criteria. the inclusion criteria are children who are in SD 1 and MI Negeri Kalikurmo, Bringin Subdistrict and aged 11-12 years at the time of the study, children are cooperative and willing to be examined with prior consent, fill in the informed consent provided. The exclusion criteria consist of bad health condition when the study was carried out, which resulted in uncooperation during the examination, also children in SD N 1 and MI Negeri Kalikurmo, Bringin Subdistrict

who used dental accessories or tools (dental braces and dentures).

Methods

Sterilize the tools with alcohol 90%. Then, fill in the sample identity. In the beginning, briefing was carried out for this study and filling in the informed consent provided.

The researcher provides directions for filling out the questionnaire given so that there are no filling errors. The questionnaire consisted of tooth brushing habits, cariogenic food consumption level, parents' income, and parental education level. The final stage is checking / examining dental caries in the subject using a sonde and mouth glass

Research Ethics

The research permit has been approved by ethical clearance with No. 403 / EC / H / KEPK / FK-UNDIP / IX / 2019.

RESULT

The results of statistical data processing were obtained from bivariate analysis using the Chi Square test. By using the 95% degree of confidence ($\alpha = 0.05$). With a smaller p-value ($p < 0.05$) there is a significant relationship.

Table 1. Bivariate Chi-square Test Test Results

Variable	Caries Status				p
	Low		High		
	n	%	n	%	
Class					
5	8	28,6	20	71,4	0,055 [¥]
6	3	9,4	29	90,6	
Age					
11	8	20,5	31	79,5	0,731 [£]
12	3	14,3	18	85,7	
Gender					
Male	6	19,4	25	80,6	0,833 [¥]
Female	5	17,2	24	82,8	
Education level					
Basic	4	10,5	34	89,5	0,040 ^{‡*}
Middle	7	36,8	12	63,2	
High	0	0	3	100	
Income level					
Low	10	20,4	39	79,6	0,670 [£]
High	1	9,1	10	90,9	
Brushing habit					
Low	0	0	6	100	0,581 [£]
High	11	20,4	43	79,6	
Cariogenic food					
Low	8	34,8	15	65,2	0,015 ^{£*}
High	3	8,1	34	91,9	

a.Information: * Significant ($p < 0.05$); ¥ Pearson chi square; £ Fisher's exact; ‡ Kruskal wallis Source: Primary data processed, 2019



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The equation model finds that the variables showing p value <0.05 are the level of education and cariogenic food so that it can be interpreted that there is a significance or relationship between these variables and the dental caries status.

DISCUSSIONS

This study aims to determine the relationship between oral health care behavior and environmental factors that are considered to have an influence on the incidence of caries that occurs in school age children aged 11-12 years.

In this study, the reason the researchers involved respondents from children aged 11-12 years (school age) were guided by WHO which reported that dental and oral health that most often experienced was caries in school-age children.⁹

The results of this study indicate a significant relationship between cariogenic food and the incidence of caries in children aged 11-12 years, this is also supported by the results of a study conducted by Meisi PRL (2015) showing significant results in the level of cariogenic food consumption on the incidence of caries in Private SD Medan.¹⁰ Some respondents with high cariogenic food consumption scores got low caries scores, this shows that there is already a good pattern of applying the habit of brushing their teeth and doing it at least 2 times a day.^{4,11}

Research by R. Nantung et al. Reported that economic factors and the level of education of parents are important for teaching healthy lifestyles.¹² Even when parents are more educated, they will show a more caring attitude towards healthy lifestyles, so that they can teach children to Implementing a pattern of dental and oral hygiene by brushing teeth at least 2 times a day.^{13,12}

Parents economy is measured from the level of parents' income, the better the income level, the more able they are to have the opportunity to get better health services for their children.¹⁴

CONCLUSIONS

Based on the results of this study, it can be concluded that the research that has been conducted at SD N 1 and MI Negeri Kalikurmo, Kecamatan Bringin, is:

1. There is a relationship between parental education level and caries status
2. There is a relationship between cariogenic food consumption and caries status.

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