

INCIDENCE OF DENTAL CARIES IN JUNIOR HIGH SCHOOL (SMP) N 1 MUARA KELINGI MUSI RAWAS REGENCY

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ABSTRACT

The increasing case of dental caries among developing country rather than the establish country which showed the decreasing of case. The high incidence of dental caries in children requires optimal handling, especially in preventing the incidence of dental caries in children This research is a quantitative research. The sample in this study is the 7th grade of public junior high school Muara Kelingi students (195 students) using total sampling technique. The data in this study were obtained using secondary data from surveillance data and medical record . Then analyzed using the Chi- Square test. This research was conducted in June 2020 at SMP N 1 Muara Kelingi Kabupaten Musi Rawas. The results showed the variable age (p 0.002), gender variable (p 0.200), knowledge variable (p 0.001), cariogenic food habits variable (p 0.001), nutritional status (p 0.212), toothbrush habit variable (p 0.015). and variable utilization of service facilities (p 0.002). In the multivariate analysis, it was found that the most dominant variable associated with the incidence of dental caries was the habit of toothbrushes with a p value of 0.012. Based on the research results, it is necessary to have facilities and information related to dental health and the need for support and an active role from parents.

Keywords: dental caries, children

1. INTRODUCTION

Oral and dental health is a public health problem that requires comprehensive handling because of its extensive impact, so it needs to be treated immediately before it's too late. One of the dental and oral diseases which ranks the highest in dental and oral health is dental caries.¹ According to (WHO, 2019), dental caries generally occurs in developing countries compared to developed countries because the prevalence of dental caries in developed countries continues to decline, while in developing countries the prevalence tends to continue to increase. The high incidence of dental caries requires optimal handling, especially in preventing

the incidence of dental caries in children.² Children aged 6-7 years have a high risk of caries because at this age children like to snack on food and drink according to their wishes and many of these foods and drinks are a contributing factor to caries in teeth, if prevention or treatment is not carried out then as adults there are many. permanent teeth that are lost due to caries and at this age are the eruption of the first permanent lower molars so that they are the teeth most at risk of caries and are the key to occlusion, if the first permanent lower molars have been lost due to caries it will disrupt the position of the other teeth that will erupt. , affecting occlusion and the jaw joint, in other words it will cause new problems in the future.⁴

The cause of dental caries is through the fermentation process that occurs in food scraps contained in the oral cavity. This process is caused by bacteria in the oral cavity by converting sugar into organic acids which results in cavities. If the problem of dental caries is allowed and not prevented, it will be very detrimental to the community, especially for school children.⁴ A study conducted in Brazil found 7,247 children were involved and 39.9 percent of them had at least one tooth with dental caries. This study identified a greater likelihood of untreated dental caries in children which has an impact on the psychological domain, difficulty eating and difficulty sleeping.²

Research on the majority of respondents was at the stage of childhood, most of the male respondents had a habit of eating cariogenic foods. Nearly half of the respondents had a bad habit of brushing their teeth. Most of the respondents had dental caries. Analysis of the incidence of dental caries in elementary school children found that most respondents (70.4%) experienced dental caries.⁵ Research conducted by (Lestari, 2019). The results obtained from the bivariate statistical analysis showed that there was a relationship between types of food, drink, behavior, the role of parents and the role of teachers with dental caries in children.⁶ Research conducted by (Nurjannah, 2016). The results of the study with the bivariate statistical chi-square test found that there was a relationship between action and dental-oral hygiene status for SMP / MTS Students Islamic Boarding School Ummul Mukminin.⁷ Cases of dental caries are at risk of developing developmental disorders in early adolescence which results in disruption of the learning process. There is no research on dental caries in children at SMPN 1 Muara Kelingi. So, it is necessary to research the incidence of dental caries in

children of SMPN 1 Muara Kelingi, Musi Rawas Regency in 2020.

2. METHODS

This study will discuss the incidence of dental caries in junior high school children 1 in Muara Kelingi, Musi Rawas Regency in 2020. Design research quantitative analytic observational with cross-sectional approach with primary data. Primary data analysis is a method by utilizing the dental examination results of SMPN 1 children. Utilizing the primary data in question is by using a statistical technique suitable for obtain the desired information from data obtained from dental health efforts that have been carried out by the Health Office, Muara Kelingi Community Health Center and surveillance data. This research was conducted in June 2020 at Muara Kelingi Junior High School, Musi Rawas District. The population in this study was taken by total sampling in grade 7 students of SMPN totaling 195 students. Data processing is done by entering data from questionnaires into computer program packages. Data processing uses the SPSS For Window version 16 program with univariate, bivariate (Chi Square Test), and multivariate analysis (Logistic Regression).

3. RESULT

The results showed that 195 students found that the percentage of students with dental caries was 75.4%, greater than that of students who were free of dental caries (24.6%). The following are risk factors for the incidence of dental caries in students (Table 1).

Table 1. Risk factor of dental caries in junior high school Muara Kelingi

Caries	Dental Caries				Frequency		p value	OR	95% CI
	Yes		No		n	%			
	n	%	n	%					
Age									
12 years	58	29,8	7	3,5	65	33,3	0,003	3,817	1,60-9,08
13 years	89	45,6	41	21,1	130	66,7			
Knowledge									
Not Good	119	61,02	22	11,3	141	72,32	0,001	5,023	2,49-10,13
Good	28	14,38	26	13,3	54	27,68			
Habit of eating cariogenic foods									
High	139	71,3	24	12,3	163	83,6	0,001	17,375	6,99-43,16
Low	8	4,1	24	12,3	32	16,4			
Nutrition Status									
Not Ideal	83	42,6	32	16,4	115	59	0,212		
Ideal	64	32,8	16	8,2	80	41			
Toothbrush habit									
Not Good	108	55,38	44	22,56	152	77,94	0,015	0,252	0,08-0,74
Good	39	20	4	2,06	43	22,06			
Medical facility									
Not Good	84	43,1	40	20,5	124	63,6	0,002	0,267	0,12-0,61
Good	63	32,3	8	4,1	71	36,4			

The results of multivariate analysis with multiple logistic regression test in the modeling stage by gradually removing the $p > 0.05$ from the variable with the largest p value. For the results above, it can be seen that the nutritional status and gender variables have the largest p value so that the next model process does not include variables. This model can explain the variation in the incidence of dental caries as much as 38.2%.

$$Z = -6,630 + 4,087 (\text{habit of eating cariogenic food}) + 1,802 (\text{habit of brushing teeth})$$

$$Z = -6.630 + 4.087 (1) + 1.802 (1) = 0.74$$

This means that if students have a habit of eating cariogenic food and bad habits of brushing their teeth, the possibility of dental caries occurs. 32.36%.

4. DISCUSSION

This research design is in the form of analytic survey research with primary data analysis approach. This design uses data on the results of dental examinations in SMP N 1 Muara Kelingi. With limited time, funds, and researchers, this design is a design that can easily answer the hypothesis, but the results are very easily influenced by factors that have not been intervened by the researcher so that there is a big possibility that bias will occur. Research (Dhimas Adi Putranto, Henry Setyawan Susanto, 2020), where the bivariate statistical test results obtained, there was no relationship between age and caries incidence in children in several orphanages in Semarang City.⁸ Based on the results of the study, it is known that respondents aged 6-7 years experienced dental caries by 86.7% compared to respondents aged 8-9 years were 80.8% and respondents aged 10-12 years were 55.2%.

The statistical test results obtained the value of $\rho = 0.053$ ($\rho > 0.05$). It can be concluded that there is no significant relationship between age and the incidence of dental caries in SD Negeri Karangayu 03 Semarang.⁹ The children aged 12 and 13 years is a group that often experiences dental and oral health problems, children need more intensive care. At that age there is a change of teeth. Baby teeth begin to fall out and the first permanent teeth begin to grow at the age of 6-8 years. This situation indicates that the child's teeth are in the mixed teeth stage. Permanent teeth will be easily damaged because the condition of the teeth is just growing and immature.¹⁰

From the research results, the researchers assume that the ages of 12 to 13 years are children in the process of development, children at that age begin to consume a lot of cariogenic foods that cause caries. The need for the role of parents in dental care for children so that dental caries does not occur. Research conducted by (Mukhbitin, 2015) found that

male students experienced dental caries more than female students, namely 35.7% versus 7.1%. From the research results, the researchers assumed that boys were more likely to have high activity which could trigger an increase in appetite, but they did not avoid foods that could cause dental caries.¹⁰

Research conducted by (Norfai and Rahman, 2017). Based on the statistical test of the relationship between knowledge and the incidence of dental caries, it was obtained $p\text{-value} = 0.014$, thus the $p\text{-value}$ is smaller than the α value (0.05), this means that statistically there is a significant relationship between knowledge and the incidence of dental caries.¹¹ Adequate nutritional intake is needed during the early stages of child development, children are the most vulnerable to the incidence of dental caries. Nutrition is one of the important health factors between physical development and mental development, the level of a normal nutritional state is achieved when optimal nutritional needs are met.¹²

Research conducted by (Rahman, Adhani and Triawanti, 2016) there is no significant difference between the dental caries index in children with stunted nutritional status and children with normal nutritional status in kindergarten students in Kertak Hanyar District, Banjar Regency. Nutrition has an important role during the growth and development of the child's body, but it is not significant with the incidence of dental caries.¹³ Brush teeth at least 2 times a day after breakfast and before going to bed at night. After eating, make it a habit for the children to rinse their mouths with water.¹⁴ The research conducted by (R. Talibo, Mulyadi and Bataha, 2016) found that there was a relationship between the habit of brushing teeth and the incidence of dental caries in third grade students of SDN 1 and 2 Sonuo.¹⁵

Research conducted (Damma Prasada, 2016) showed that 31% of respondents did not brush their teeth every day, 33% of

respondents did not use their own toothbrushes, 10% of respondents did not use toothpaste, and 33% brushed their teeth only once a day. Only 3.7% were found brushing your teeth right in the morning, namely after breakfast and brushing at night, namely before going to bed.¹⁶

The consumption of cariogenic foods can increase the risk of dental caries in school-age children. Consumption of cariogenic foods that have sweet and sticky properties causes food to remain in the mouth, settles and ferments into acid, which causes plaque on the teeth which can increase the risk of dental caries.² The research conducted by (R. Talibo, Mulyadi and Bataha, 2016) is that there is a relationship between the frequency of consumption of cariogenic food and the incidence of dental caries and there is a relationship between the habit of brushing teeth and the incidence of dental caries.¹⁵

Research conducted by (Novianus, 2016). The results also showed a significant relationship between cariogenic food consumption and the incidence of caries. One of the foods that can cause dental caries is foods that contain lots of sugar or sucrose. Sucrose has the ability to be more efficient against the growth of microorganisms and is metabolized quickly to produce acidic substances. Food that sticks to the surface of the teeth if left untreated will produce more acidic substances, thereby increasing the risk of developing dental caries.¹⁷

Reducing foods that can cause dental caries such as foods that contain sugar, besides brushing your teeth and rinsing your mouth after children consume foods that contain sugar or sucrose. Utilizing dental health services for students and parents in an effort to prevent dental caries is very necessary. In addition, health service facilities are preventive, promotive and curative media related to dental and oral health in school students.

5. CONCLUSION

The most dominant variable associated with the incidence of dental caries in students of SMPN 1 Muara Kelingi, Musi Rawas Regency in 2020, is the habit of eating cariogenic food with a p value of 0.012 with a probability value of 32.36%. Schools can strengthen UKGS by collaborating through the Puskesmas so that knowledge about oral health can increase and change behavior in maintaining dental and oral hygiene. Research on dental caries in junior high school students. It is hoped that this research can be used as information in conducting research for the completion of educational final assignments. It is hoped that this research can be used as a reference in conducting further research related to dental health and can be carried out with different methodologies and variables.

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