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Relationship Frequency Of Cariogenic Food Consumption With Dental Caries Rate In Class Ii Students Sdn Mojo Viii/227 Surabaya

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ABSTRACT

Dental caries is a multifactorial disease, covering the main factors of teeth, microorganisms, carbohydrates and time as additional factors. One of the factors causing the susceptibility of school-age children to dental caries is the habit of consuming foods that are sticky and contain sugar. The problem in this study is the high rate of dental caries in grade II students of SDN Mojo VIII/227 Surabaya. This study aims to determine the relationship between the frequency of cariogenic food consumption and the number of dental caries in grade II students at SDN Mojo VIII/227 Surabaya. This type of research is cross-sectional analytics. The sample in this study was 40 people, and it was taken by purposive sampling. The method of collecting its data uses a questionnaire. The analysis technique uses Kendall's test. The results of the study found that there was a significant relationship between the frequency of cariogenic food consumption and the number of dental caries in grade II students at SDN Mojo VIII / 227 Surabaya.

INTRODUCTION

Dental and oral health is a health problem that requires comprehensive treatment because dental problems are broad in dimension and have broad impacts that include physical, mental and for individuals suffering from dental diseases. Teeth are part of the chewing apparatus in digestion in the human body. The main problem of dental and oral health in children is dental caries. Dental and oral health problems can occur in both adults and children. However, children are more susceptible to these problems, especially elementary school children (Faihatul Mukhbitin, 2018).

The results of riskesdas data in 2018, that as many as 57.6% of the Indonesian population has dental and oral problems but only 10.2% receive treatment by dental medical personnel. By age group, the largest proportion of dental and oral problems is the age group of 5-9 years 67.3% with 14.6% having received treatment by dental medical personnel. Meanwhile, in East Java

Province, which had cavity problems, 42.4% in 2018. (Riset Kesehatan Nasional, 2018).

According to the WHO (World Health Organization) in 2017, worldwide 60-90% of schoolchildren and almost 100% of adults have dental caries, which often generates pain and discomfort. Based on data from Riskesdas (2018), dental caries problems in the age group of 7-8 years in Indonesia 92.6%. (Riset Kesehatan Nasional, 2018).

Dental caries is one of the most common diseases found in the oral cavity, so it is a major problem for dental and oral health. Children entering school age have a high risk of developing caries. Cavities or caries are diseases of the hard tissues of the teeth due to bacterial activity. Bacteria will ferment carbohydrates into acids which will result in a decrease in pH, plus adhesive and cohesive plaque properties on the tooth surface. This acid will destroy the inorganic and organic parts of the tooth. The combination of these two processes of destruction can give rise to caries (Effendy, Lunardhi, dan Rukmo 2020).

Dental caries is an infectious disease caused by the demineralization of enamel and dentin which is closely related to the consumption of cariogenic foods. The occurrence of dental caries is due to the role of the bacteria that cause caries found in the oral Streptococci group which are collectively called Streptococci mutans. This dental caries can be caused by one or even more factors. Wrong habits often occur in school-age children such as the habit of consuming cariogenic foods excessively, for example, sweets, chocolate, milk, biscuits and others (Rekawati dan Frisca 2020).

Makanan manis dan lengket menyebabkan terjadinya karies pada gigi. Dalam penelitian Sweet and sticky foods can cause the occurrence of caries on the teeth. In research Farizah dkk (2021), mentions that the more often a person consumes sweet and sticky foods will result saliva in the oral cavity remains in an acidic atmosphere, as a result of which the teeth will be more susceptible to caries. The consumption of sweet foods during leisure hours of eating will be more dangerous than at the main meal time. The contact of sugar with plaques becomes extended with sweet foods that produce a lower pH. The relationship between carbohydrate consumption and the occurrence of dental caries has to do with the formation of plaque on the surface of the teeth. The plaque is formed from food residue attached between the teeth and the plaque will be overgrown with bacteria that can convert glucose into acid so that the pH of the oral cavity decreases to 4.5. In this situation, it will form pores or porosity in the structure of tooth enamel so that it can cause the dissolution of calcium minerals (Farizah, dkk 2021).

Cariogenic foods are foods that contain a lot of sugar, are sweet, sticky and easily destroyed in the oral cavity and can trigger dental caries. Sweet and sticky foods in general are very popular with school-age children because they taste good, have attractive shapes and are cheap. Consumption of cariogenic foods too often leads to increased acid production in the oral cavity which can result in dissolved tooth enamel, and dental caries occurs (Nissa, Hadi, dan Marjianto 2021).

Based on data from dental and oral health examinations conducted on grade II children at SDN Mojo VIII, 25 children were obtained by children who had dental caries, while only 7 children did not have caries on their teeth. These results show that the prevalence of dental caries is as much as 60%. This shows that the level of

caries in grade II students of SDN Mojo is high. So the problem in this study is the high rate of dental caries in grade II students of SDN Mojo VIII / 227 Surabaya

METHOD

This type of research is analytical with a cross-sectional design. The sample in the study was all grade II students of SDN Mojo Surabaya In this study, using a full sampling technique with a total of 40 research locations used were at SDN MoJo II Surabaya.Data collection method using questionnaire sheets. The purpose of this study was the relationship between the frequency of cariogenic food consumption and the number of dental caries in grade II students at SDN Mojo Surabaya. The data analysis technique used Kendall's test.

RESULTS

Characteristics of Respondents Tabel 5.1 Distribusi Frekuensi Karakteristik Responden Siswa Kelas II di SDN Mojo

Characteristi cs	Freku ensi	Perse ntage
Gender Boys Girls	18 22	45% 55%
Age	15 25	37% 63%

Based on table 5.1, it is known that the subjects of the study were 40 respondents consisting of 18 male respondents (45%) and 22 female respondents (55%). Based on age group, the percentage of respondents from this study who was 7 years old was 15 respondents (37%), and those aged 8 years were 25 respondents (63%).

Data Collection Results

Table 5.2 Distribution of Cariogenic Food Consumption of Grade II Students at SDN Mojo Surabaya

Cariogenic	Fre	Perc
food categories	kuensi	entage

Infrequently	3	8%
Sometimes	15	37%
Often	22	55%
Total	40	100%

Based on table 5.2, it is known that respondents had a cariogenic food frequency with a rare category of 8% of as many as 3 people, a sometimes category of 37% of as many as 15 people, and a frequent category of 55% as many as 22 people.

Tabel 5. 3 Distribution of Class II Caries Numbers at SDN Mojo Surabaya

Categories Caries	Frekuensi	Pers entase
Good	4	10%
Average	16	40%
Poor	20	50%
Total	40	100 %

Berdasarkan tabel 5.3 diketahui bahwa responden memiliki kategori karies baik sebesar 10% sebanyak 4 orang, kategori sedang sebesar 40% sebanyak 16 orang, dan kategori buruk sebesar 50% sebanyak 20 orang.

Tabel 5.4 Kendall's Test Results know the Relationship between Cariogenic Food Frequency and Dental Caries Numbers of Grade II Students at SDN Mojo Surabaya

		- ·
Variable	р-	Correl
	Value	ation
		Coefficient
Frequency of		
Consumption of		
Caryogenic	0,	0,451
Foods	003	**
Dental		
Caries Numbers		

Based on table 5.4, it is known that the p-value is 0.003 which means the value (p<0.05), it can be concluded that there is a significant "relationship"

between the frequency of cariogenic food consumption and the dental caries number of grade II students at SDN Mojo Surabaya.

DISCUSSION

Frequency of Cariogenic Food Consumption of Grade II Students at SDN Mojo Surabaya

Based on data analysis that has been carried out on respondents to analyze the frequency of consumption of cariogenic food for grade II students at SDN Mojo VIII / 227 Surabaya, it shows that students have a frequent category of consuming cariogenic foods. This is because students think that foods such as sweets, chocolate, and ice cream have a good and sweet taste that makes children like them compared to fibrous foods. In addition, the availability of sweets at school as well as at home makes it easy for children to get them. This is in line with the opinion expressed by Mendur (2017) that cariogenic foods are foods that are very popular with children because they contain sugars and carbohydrates. There are many types of cariogenic foods that are sweet, soft, and easily attached to teeth such as candy, chocolate, ice cream, biscuits, and others. In addition to its sweet and delicious taste, it is relatively cheap, easy to get, is sold in various shapes and colours of food varies and is liked by children. (Mendur dkk, 2017)

Based on research conducted by Christy in Wati and Mutiara (2021) obtained the results of the frequency of consumption of cariogenic foods by elementary school students, namely Sweets with the category of very often consumed (>2x a day) of 46.29%, Chocolate bars are included in the category of often consumed, namely 24.93%; Brown bread, belonging to the category of sometimes consumed which is 20.37%; Pudding, which belongs to the category of almost never consumed, is 33.32%. obtained the results of the frequency of consumption of cariogenic foods of elementary school students, namely Sweets with the category of very often consumed (>2x a day) of 46.29%, Chocolate bars are included in the category of often consumed, namely 24.93%; Brown bread, belonging to the category of sometimes consumed which is 20.37%; Pudding, which belongs to the category of rarely consumed, is 33.32%. School-age children are children ranging in age from 6 to 12 years old and at this time children are starting to be interested in trying foods that they just know about. Children always want something that they find interesting, both kinds of toys and food. The foods most preferred by school-aged children are foods that taste sweet and sticky such as milk, bread, and chocolate which are examples of cariogenic foods. (Wati dan Mutiara, 2021)

Dental Caries Numbers of Grade II Students at SDN Mojo VIII/227 Surabaya

Based on data analysis that has been carried out on respondents to analyze the number of dental caries in grade II students at SDN Mojo VIII / 227 Surabaya, it shows that most of the students experience caries with a bad category. This is because most of the students do not know how to take care of their teeth properly, students still consume a lot of sweet and sticky foods, and most of the respondents still do not properly how to brush their teeth. This is in line with the research conducted by Wati dan Mutiara (2021) In elementary school children aged 6-9 years which showed that 80% of students had dental caries and 20% did not have dental caries. This shows that the child's dental hygiene is in poor condition. The formation of dental caries is due to food and drinks that are still attached to the child's teeth, and not clean brushing of teeth for a long time. Characterized by the appearance of black plaque-interrupted teeth (Wati Mutiara, 2021).

According to Tarigan in Kusmana (2022) that caries can be caused by various factors including carbohydrates, microorganisms, saliva, surface and tooth shape. Carbohydrates left in microorganisms are the cause of dental caries. Carbohydrates in the form of flour or liquid that are sticky and easily destroyed in the mouth make it easier for caries to arise than other physical forms, carbohydrates such as pastries, bread, ice cream, milk, sweets, and others. The high rate of dental caries is influenced by behavioural factors of children who do not realize the importance of maintaining dental and oral health (Kusmana, 2022).

Relationship of Frequency of Cariogenic Food Consumption with Dental Caries Numbers of Grade II Students at SDN Mojo VIII/27

Based on data analysis that has been carried out on respondents to analyze dental caries numbers in grade II students at SDN Mojo VIII / 227 Surabaya, it shows that there is a significant relationship between the frequency of

consumption of cariogenic foods and dental caries numbers.

The results of data analysis in this study also showed the frequency of consumption of cariogenic foods which is often one of the factors in the poor caries rate in students. The results of this study are in line with research by Sumini, et al, that the habit of consuming cariogenic foods has a relationship with the onset of dental caries. In the study, it was found that children who consumed high cariogenic foods had severe dental caries severity. The frequent frequency of consuming cariogenic foods can pose a risk of plaque buildup, and end in the formation of caries. In addition, cariogenic foods have a high sucrose content, where sucrose is a more vulnerable medium for the growth of microorganisms. This is likely due to several factors such as the shape of the packaging or attractive colours. This result is similar to a study conducted by Indry, et al at Village Elementary School. Kawongkoar District, that the types of food that are more consumed are sweets and chocolate with the habit of consuming 2-3 times per day (Rekawati dan Frisca, 2020)

Cariogenic food is a type of food that is very popular with children because of its sweet taste, varied shapes and colours and relatively low price. Cariogenic foods are sweet, soft, and easily stick to the teeth, triggering the onset of dental caries. The occurrence of dental caries is related to the formation of plaque, plaque is formed from the remnants of food attached to the sidelines of the teeth and the presence of this plaque will eventually be overgrown with bacteria that can convert glucose into acid up to pH 4.5. The more often children consume foods that contain carbohydrates, especially sucrose, the more acidic the state of the mouth so the more likely it is that enamel demineralization occurs in the teeth and causes caries. Frequency greatly affects the demineralization processes of and remineralization. The demineralization process will cause tooth enamel to lose crystallization ions so that the exposure to dental caries is very high while remineralization is the process of replacing calcium and phosphate (minerals) that begin to erode in tooth enamel (Mendur, 2017).

The relationship between the consumption of cariogenic foods to the incidence of dental caries can occur because cariogenic foods are foods rich in sugars and can cause tooth decay. The nature of cariogenic foods is sticky and attached to the surface of the teeth and easily

tucked between the surface of the teeth such as chocolate, candy, biscuits, bread, pastries and. The frequency of consumption of cariogenic foods greatly affects the incidence of dental caries. because the more often a person consumes sweet and sticky foods will result in saliva in the oral cavity remaining in an acidic atmosphere, as a result of which the teeth will be more susceptible to caries. The consumption of sweet foods during leisure hours of eating will be more dangerous than at the main meal time. The contact of sugar with plaques becomes extended with sweet foods that produce a lower pH. The relationship between carbohydrate consumption and the occurrence of dental caries has to do with the formation of plaque on the surface of the teeth. The plaque is formed from food residue that is attached between the teeth and the plaque will be overgrown with bacteria that can convert glucose into acid so that the pH of the oral cavity decreases to 4.5. In this situation, it will form pores or porosity in the structure of tooth enamel so that it can cause the dissolution of calcium minerals (Farizah dkk,2021)

If the elderly have good knowledge and are able to understand in brushing their teeth properly and correctly there is no knowledge of the elderly who are still in the unskilled category. This is in line with the research Ali et al. (2016), which states that continuous learning how to brush your teeth will change a person's behaviour, the attitude of action and skills. According to (Notoatmojo, 2018), namely the improvement of brushing skills due information through health education. Health education is essentially an activity or effort to convey a health message to the community, group or individual, in the hope that with the message, the community, group or individual can gain better knowledge about health. So it is hoped that knowledge can affect his behaviour. According to research Suratri et al. (2016), It was found that it is not enough if you only have good knowledge and attitudes in maintaining dental health because it is also necessary to balance the knowledge and attitudes of the closest people you already have with the implementation to form good dental health behaviour as well. Knowledge and attitudes are closed behaviours that are still very limited in the form of perception, feelings and attention. Meanwhile, actions are open behaviours that have been carried out or have been practised to realize an action, supporting factors such as facilities and infrastructure are needed. In order to improve the status of dental and oral hygiene is necessary

Efforts to maintain dental and oral health, one of which is brushing your teeth. The results of research that have been carried out by Triana (2018), state that there is a significant relationship between brushing behaviour and dental and oral hygiene status.

Poor dental and oral hygiene is caused by the presence of debris and plaque that can lead to the onset of gingivitis and long-term exposure to plaque can lead to loss of periodontal attachment. Long-term exposure to plaque can also cause demineralization and destruction of teeth resulting in caries. Poor dental and oral hygiene can also lead to the presence of plaque and calculus. Plaque and the accumulation of bacteria contribute to the deterioration of oral health and cause periodontal disease [9]. According to (Tarigan 2016), says that Keeping the oral cavity clean should begin in the morning both before and after breakfast, Brushing your teeth will reduce the potential erosion mechanism on the surface of teeth that have been demineralized. Followed by maintaining healthy teeth and mouth at night before going to bed. Because when sleeping, the salivary flow will decrease so that the buffer effect will be reduced, therefore all plaque must be cleaned followed by the administration of preventive drugs such as fluoride. According to (Putri et al. 2010), The recommended length of toothbrushing is a minimum of five minutes, but it is actually too long. Generally, people do a maximum of two minutes of toothbrushing.

So it can be concluded that the skill of how to brush teeth for the elderly can affect the debris index. With good knowledge, the elderly should be able to practice well as well. It can certainly change habitual behaviour, especially how to brush your teeth. So that the health status of the teeth and mouth, especially the debris index, can change. This is in line with previous primary data obtained by bad category index debris. With the knowledge gained, an index debris with a moderate category is obtained. Dental and oral health problems often occur in the elderly, therefore with good knowledge, Then dental and oral health problems in the elderly can be minimized.

Debris Index Elderly

Based on the results of the analysis of the data obtained, most of the index debris in the elderly is in the moderate category. This can happen because there is a combination of internal and external factors. These internal factors consist of physical and psychic factors, while these external factors consist of various factors such as environmental behaviour, heredity and health services. Based on H.L. Blum's theory in Notoatmojo (2018) also states that a person's dental health status or society can be influenced by four factors, namely heredity, environment (physical and socio-cultural), behaviour and health services. Behavioural factors play an important role in influencing the health status of teeth and mouth. The health status of teeth and mouth can be measured, one of which is from the indicator of the prevalence of dental caries. Dental caries is caused by 4 main factors i.e. host, microorganism, time and substrate (Marinda, 2017). Menurut Ermawati (2017), Dental and oral hygiene for the elderly really need to be considered, because the elderly are already susceptible to various diseases, both diseases of the oral cavity and diseases in general. Therefore, dental and oral hygiene is one the important parts to maintain the disease and its severity in the elderly. Based on the results of the studyErmawati (2017), It can be seen that almost the entire group of elderly people who have poor oral health have done teeth and mouth cleaning, and few elderly people do not/ rarely brush their teeth. Nevertheless, the hygiene conditions of their teeth and mouth are still mostly poor. It can be concluded that many elderly people do not understand how to clean their teeth and mouth properly and correctly. Such conditions arise due to the elderly not understanding how to clean their teeth and oral cavity. In addition, the decline in musculoskeletal function in the elderly is a very important factor in influencing the ability of the elderly to clean their teeth and oral cavity, so that abnormalities in the oral cavity are increasingly diverse and complex. The efforts that need to be made in maintaining dental and oral hygiene of the elderly in the wider community, in general, are to implement a clean and healthy lifestyle pattern. The way to maintain dental and oral hygiene in the elderly is to rinse your mouth and brush your teeth regularly even though you are toothless or have lost many teeth. It aims to maintain the condition of the gums and periodontal tissue to keep them healthy. The

elderly who have a lot of teeth, it is taught to brush their teeth twice a day after meals and before going to bed every day regularly. If you find cavities or brown or blackish spots, it is recommended to check your teeth with the nearest dentist or pukesmas. These efforts are what is needed for the elderly to maintain and improve the quality of dental and oral health in the wider community[11].

The Relationship of Brushing Skills To Debris Index In The Elderly

Based on the results of the study, it is known that there is a relationship between the skill of how to brush your teeth against the debris index in the elderly. The skills possessed, skilled or not, it certainly affects the index debris numbers. Although the debris index number is high the skill of how to brush teeth is good, it is necessary to understand the hygiene of teeth and mouth properly and correctly. Seniors who have good skills should be able to behave well about brushing their teeth, and of course, the impact of this behaviour is that the oral cavity becomes clean and debris-free. This is in line with Notoatmojo's theory that the improvement of brushing skills is due to information through health education. Health education is essentially an activity or effort to convey a health message to the community, group or individual, in the hope that with the message, the community, group or individual can gain better knowledge about health. So it is hoped that this knowledge can affect his behaviour. According to Salamah (2020), said that brushing your teeth is an effort made to keep your teeth clean and healthy. Teeth have roles including Aesthetics (Teeth can shape our face, so they are very influential in determining a person's beauty and good looks), To destroy food, and helping in speaking. Many disadvantages caused by not brushing your teeth include Teeth looking dirty and brownish yellow, bad breath increases, poor dental and oral health that can affect the appearance, so as to create an inferiority complex that will affect their social life and dental caries/tartar, and other diseases caused by bacteria that will cause uncomfortable feelings.

ONCLUSION AND RECOMMENDATION

Based on the results of the study and after analysis this study can be concluded as follows:

- 1. The frequency of consumption of cariogenic foods in grade II students at SDN Mojo Surabaya is mostly categorized as frequent.
- 2. Caries Numbers in grade II students at SDN Mojo Surabaya mostly experience caries with bad categories.
- 3. There is a significant relationship between the frequency of consumption of cariogenic foods and the number of dental caries in grade II students at SDN Mojo Surabaya.

Saran

1. For Parents of Grade II Students at SDN Mojo Surabaya.

With this research, it is hoped that parents should be able to increase their knowledge about Dental Health in children because at that age children need intensive guidance supported by knowledge and the role of parents so that the number of dental caries in children decreases.

2. For Grade II Students at SDN Mojo Surabaya For Grade II Students at SDN Mojo Surabaya.

- a. It is desirable for preschoolers to eat less sugary and sticky foods and drinks. Because foods that are often consumed can affect the severity of dental caries such as foods containing carbohydrates and processed sugars such as glucose.
- b. It is expected that after consuming sweet and sticky foods, students and students do a minimum of gargling with plain water to clean the leftovers that stick to the teeth.
- c. It is expected that students and students diligently brush their teeth 2x a day after breakfast and the night before going to bed, in the right way as taught by mothers or other parents.

3. For Teachers at SDN Mojo Surabaya.

With this research, it is hoped that teachers can also improve the dental and oral hygiene of their students, by providing additional lessons on dental and oral health to students and students. Because the teacher is the second parent in the school.

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