



The Relationship between the Level of Knowledge of Consuming Donuts and Sweet Gum as Cariogenic Foods and the Occurrence of Dental Caries in Class 12 Students at Cahaya Medan High School

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ABSTRACT

Introduction: Food and drinks taste sweet and sticky, which can trigger dental caries. The increasing number of dental caries for children shows the need for optimal treatment in increasing their knowledge. The aim of the research is to find a relationship between the level of knowledge of consuming donuts and sweet chewing gum as cariogenic foods on experiencing dental caries for grade 12 students at Cahaya Medan High School. **Methods:** Data collection using questionnaires and checking teeth. Data were analyzed using statistical tests Kruskal-Wallis. This type of research is an analytical survey through design cross sectional. **Results:** The research results showed that the majority of the level of knowledge of consuming donuts and sweet chewing gum as cariogenic foods in the sample was sufficient with the average DMFT score being $.63 \pm 2.723$. **Conclusion:** it can be concluded that the better the level of knowledge about consuming donuts and sweet chewing gum as cariogenic foods, the lower the dental caries.

1. Introduction

The level of knowledge regarding dental and oral health problems generally has a low prevalence rate. Dental and oral health problems can affect general health. caries is a common oral health disorder. Caries can occur due to the presence of sweet, soft, and sticky food residue on the surface of the teeth. Cariogenic foods such as donuts and chewing gum are enjoyed by many people. Donuts and chewing gum generally contain sugar or artificial sweeteners, which can affect dental health. Donuts have a variety of flavors resulting from the topping on top, namely powdered sugar, sprinkled with melted chocolate, sprinkled with chocolate chips. Meanwhile, sweet chewing gum

contains quite a lot of sugar. Excessive cariogenic content in food and drinks is the main cause of dental caries.¹⁻⁵

The World Health Organization (WHO) reports that worldwide, approximately 60-90% of school children and almost 100% of adults suffer from dental caries, often accompanied by pain and discomfort. This prevalence tends to increase with age.⁶⁻¹⁰ This study aims to find the relationship between the level of knowledge of consuming donuts and sweet chewing gum as cariogenic foods and the incidence of dental caries in grade 12 students at Cahaya Medan High School.

2. Methods

This research uses an analytical survey method with a cross-sectional design, which studies the correlation of risk factors (exposure) with impacts (disease). A total of 88 samples met the inclusion criteria. The inclusion criteria were students who frequently consumed cariogenic foods such as sweet gum and donuts. Caries is usually caused by bacteria from cariogenic foods that stick to teeth. Researchers will check the caries index on students, and students will fill out a questionnaire.

Further data analysis used the SPSS program with univariate and bivariate analysis. This univariate data analysis produces frequency distributions and percentages, as well as the average value and standard

deviation for each variable, and bivariate data analysis determines the relationship between variables. In this study, to test the variable level of knowledge of cariogenic food consumption on the occurrence of caries, the Kruskal-Wallis test was used, where if the p-value is <0.05 , a relationship between the variables is known.

3. Results

The relationship between the level of knowledge of consuming donuts and sweet chewing gum as cariogenic foods and experiencing dental caries for grade 12 students at Cahaya Medan High School is as follows:

Table 1. Level of knowledge of consuming donuts and sweet chewing gum as cariogenic foods against the presence of dental caries.

Knowledge level	Mean DMFT score	P
Good	1,25±1,125	0,0001*
Enough	3,36±1,552	
Not enough	5,41±2,181	

Based on the research results show that the average DMFT score for samples who have good, sufficient, and poor knowledge about consuming donuts and sweet chewing gum as cariogenic foods is 1.25 ± 1.125 ; 3.36 ± 1.552 and 5.41 ± 2.181 . From the results of the Kruskal-Wallis statistical test, it is accepted that $p=0.0001$ ($p \leq 0.05$) is significant if a significant difference in the mean DMFT score is found between samples with good, sufficient, and low knowledge. Thus, there is a relationship between the level of knowledge of consuming donuts and sweet chewing gum as cariogenic foods and experiencing dental caries for grade 12 students at Cahaya Medan High School. The better the level of knowledge, the lower the average caries score.

4. Discussion

This research was conducted on 80 grade 12 students at Cahaya Medan High School who met the inclusion and exclusion criteria. Based on age

characteristics, the results showed that the sample was 17 years old (58.8%), followed by 16 years (26.3%) and 18 years (15.0%). Caries is usually caused by bacteria from cariogenic foods that stick to the teeth, and these bacteria then metabolize sugar to produce acid. Over time, this process causes tooth structure to demineralize. Realizing the importance of early prevention efforts by reducing the consumption of cariogenic foods has a strong impact on reducing the risk of dental caries in children.¹¹⁻¹⁷

The research results found that the majority of the sample had a sufficient level of knowledge about consuming donuts and chewing gum as cariogenic foods. Simple preventive measures include changing your diet by reducing your intake of foods high in sugar, which can help reduce the risk of tooth decay, and reducing the debris index more than green melons.¹⁸⁻²⁰

5. Conclusion

The level of knowledge of consuming donuts and sweet chewing gum as cariogenic foods has a significant relationship to the occurrence of dental caries for grade 12 students at Cahaya Medan High School.

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