The Effect of Nutritional Status on Dental Caries Levels for Students in Grades V and VI Of SDN 2 Molawe North Konawe Regency

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Abstract:- Dental and oral health is a health problem that requires comprehensive treatment, because dental problems are broad-dimensional and have a wide impact that includes physical, mental, and social factors for individuals suffering from dental diseases (Amelia et al. 2022). One of the dominant dental and oral health diseases in Indonesia is dental caries or cavities. Dental caries makes children experience loss of chewing power and impaired digestion, resulting in suboptimal growth (Kusmana 2021). Nutritional problems in school-age children are health problems that affect the future and intelligence of children, it requires more serious attention, one of which is nutritional status. Nutritional intake is very much needed at the beginning of children's growth and development, school-age children are the age most vulnerable to the occurrence of dental caries because of poor child hygiene patterns, and poor children's diet, so that if there is a nutritional imbalance it can cause prolonged consequences and can settle on biological functions and salivary glands. The type of research used is quantitative observational analysis with a cross sectional approach. The sampling technique was carried out using the Slovin formula where the number of samples obtained was 40 respondents.

The nutritional status obtained in the undernutrition criteria was 12 (30%), normal criteria were 23 (57.5%), overweight criteria were 5 (12.5%). Meanwhile, the caries rate obtained in the very low category was 28 (70%), the low criteria were 7 (17.5%), the medium criteria were 1 (2.5%), and the high criteria were 5 (10%). A sig of 0.000 (<0.000) was obtained, which means that there is an influence between nutritional satatus and the incidence of dental caries.

It is recommended that the school implement UKGS well so that it can pay attention to the dental and oral health of students. Then students and parents are expected to be more concerned about dental and oral health, pay attention to the food consumed so as not to cause dental caries and nutritional status problems.

Keywords:- Nutritional Status, Dental Caries, Children.

I. INTRODUCTION

Dental and oral health is a health problem that requires comprehensive treatment, because dental problems are broad-dimensional and have a wide impact that includes physical, mental, and social factors for individuals suffering from dental diseases (Amelia et al. 2022). One of the dominant dental and oral health diseases in Indonesia is dental caries or cavities.

Dental caries is an infectious disease caused by the formation of karogenic plaque on the surface of the teeth (pits, *fissures* and interproximal areas) characterized by the demineralization of the hard tissues of the teeth which causes bacterial invasion so that it can cause pulp death and the spread of infection to the tissues around the tooth root which then causes pain. Dental caries makes children experience loss of chewing power and impaired digestion, resulting in suboptimal growth (Kusmana 2021).

Based on the results of Basic Health Research (Riskesdas) in 2018, the proportion of the Indonesian population who have dental caries problems in the age group of 5-9 years is 92.6%. The average DMF-T index of permanent teeth in Indonesia is 7.1, while the average DMF-T index of the 12-year-old group is 1.9.

Nutritional problems in school-age children are health problems that affect the future and intelligence of children, it requires more serious attention, one of which is nutritional status. Based on the results of Riskesdas 2018, the prevalence of nutritional status (BMI/U) in Indonesian children aged 5-12 years is very thin at 2.4%, thin at 6.8%, obese at 10.8%, and obese at 9.2% (Zulhika, Hariawan, and Solichah 2023).

Nutrition is a balance between the intake of nutrients that enter the body from food or the balance between nutrients that enter the body and nutrients that the body needs to metabolize. Nutritional status is the state of the body caused by food consumption. The state of normal nutritional status is seen from the balance between the amount of energy entering the body and the energy released by the body according to the needs of each individual (Fatmaningrum 2022).

Nutritional intake is very much needed at the beginning of children's growth and development, school-age children are the most vulnerable to the occurrence of dental caries because of poor child hygiene patterns, and poor children's diet, so that if there is a nutritional imbalance, it can cause prolonged consequences and can settle on biological functions and salivary glands.

Based on the above background, the researcher is interested in conducting a study entitled The Effect of Nutritional Status on the Level of Dental Caries in School-Age Children.

II. METHODS

This type of research uses quantitative observational analytics. Analytical research is research conducted in an effort to find the influence between one variable and another. Quantitative is research that usually relies on the power of its analysis which is a statistical tester of data. The approach used is a cross sectional approach, which is an approach by observing or measuring variables at a certain time.

III. RESULT

➤ *Characteristics Responden*

Table 1 Characteristics of Respondents by Gender

Gender	Frequency (F)	Percentage (%)
Man	18	45
Woman	22	55
Sum	40	100

Table 1 shows that the gender in this study is 18 (45%) in males and as many as 22 (55%) in females.

Table 2 Characteristics of Respondents by Age

Age	Frequency (F)	Percentage (%)
11 th	20	50
12 th	20	50
Sum	40	100

Table 2 shows the characteristics of respondents based on age of 20 (50%) at the age of 11 and 12 years.

➤ *Nutritional Status*

Table 3 Distribution of Frequency of Nutritional Status among Respondents

Criterion	Frequency (f)	Percentage (%)
Malnutrition	12	30
Normal Nutrition	23	57,5
Overweight	5	12,5
Obesitas	0	100
Sum		

Table 3 shows the frequency of nutritional status in the undernutrition criteria as many as 12 (30%), normal criteria as many as 23 (57.5%), overweight criteria as many as 5 (12.5%).

➤ *Karies Gigi*

Table 4 Distribution of caries Frequency among Respondents

Criterion	Frequency (F)	Percentage (%)
Very Low	28	70
Low	7	17,5
Keep	1	2,5
Tall	4	10
Very High	0	0
Sum	40	100

Table 4 shows that the frequency of caries numbers in the very low category is 28 (70%), the low criterion is 7 (17.5%), the medium criterion is 1 (2.5%), and the high criterion is 5 (10%).

➢ *Effect of Nutritional Status on the Incidence of Caries in Children*

Table 5 Relationship between Nutritional Status and Incidence of caries in Children

Status Gizi	Karies					Total	*p-value*
	Very Low	Low	Keep	Tall	Very High		
Malnutrition	9	3	0	0	0	12	0,000
Normal Nutrition	19	4	0	0	0	23	
Overweight	0	0	1	4	0	5	
Obesitas	0	0	0	0	0	0	
Sum	28	7	1	4	0	40	

Table 5 shows a sig value of 0.000 (<0.001) which means that there is an influence between nutritional satatus and the incidence of dental caries.

IV. CONCLUSION

➢ *Conclusion*

• The nutritional status obtained in this study was in the undernutrition criteria of 12 (30%), normal criteria of 23 (57.5%), overweight criteria of 5 (12.5%).

• The caries level obtained in this research was in the very low category of 28 (70%), the low criterion was 7 (17.5%), the medium criterion was 1 (2.5%), and the high criterion was 5 (10%).

• A sig of 0.000 (<0.000) was obtained, which means that there is an influence between nutritional satatus and the incidence of dental caries.

V. SUGGESTIONS

• It is recommended that the school implement UKGS well so that it can pay attention to the dental and oral health of students.

• Students and parents are expected to be more concerned about dental and oral health, pay attention to the food consumed so as not to cause dental caries and nutritional status problems

• The results of this research can be continued and further developed by increasing the number of samples

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