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Relationship of Dental Health to Nutritional Status in Children in Grades I and II SDN 03 Curup Kota

Hendri Heriyanto
Prodi Keperawatan Curup
Poltekkes Kemenkes Bengkulu
Bengkulu, Indonesia
hendriasik79@gmail.com

Almaini
Prodi Keperawatan Curup
Poltekkes Kemenkes Bengkulu
Bengkulu, Indonesia
almaini01@gmail.com

Chandra Buana
Prodi Keperawatan Curup
Poltekkes Kemenkes Bengkulu
Bengkulu, Indonesia
chandrabagus 71@yahoo.com

***Abstract*— Oral health is critical because the teeth and gums are damaged and not treated will cause pain in the teeth, chewing disorders and can disrupt the body's health. Dental caries or cavities in Indonesia for tooth pains that interfere with 13% of the population per month or as much as 2.62 million per month. Riskesdas (2016) showed that 72.1% of the Indonesian population has experience cavities. This research aimed to determine the relationship of oral health on nutritional status in children of class I and II SDN 03 Curup Kota in 2017. This research used a cross-sectional design; in this study, researchers took a total data sampling, where respondents were 78 students at SDN 03 Curup Kota in 2017. Univariate analysis of most of 53 people who experienced dental caries were 32 respondents (60.4%) who had abnormal nutritional status, and a small portion of 25 respondents who were not dental caries were 20 respondents (80.0 %) who have normal nutritional status. Based on the results of statistical tests Chi-Square, the test results were obtained ρ (0.002) <0.05, so there was a relationship between dental caries and nutritional status in children of SD 03 Curup Kota in 2017. It is expected that the respondents, especially in the children of SDN 03 Curup Kota always to maintain dental and oral hygiene.**

Keywords: Dental Health, Dental Caries, Nutritional Status

I. INTRODUCTION

Indonesia's health development goals are the creation of a healthy Indonesia 2020 in the form of increasing awareness, willingness and ability to live healthily for everyone in order to realize an optimal level of public health through the creation of a society, nation and State of Indonesia. It is characterized by its inhabitants living in the environment and living behavior. Healthy, and can reach quality health services and facilities fairly and evenly throughout the territory of the Republic of Indonesia and can realize an independent nation that is advanced and prosperous. Public health degrees can be seen by measuring birth rates, morbidity and life expectancy.

Health development is carried out by giving priority to efforts to improve health, prevent disease by not neglecting to heal and restoring health, including children of elementary age to achieve optimal health. Oral and dental health has increased in the last century, but the prevalence of dental caries in children remains a significant clinical problem. Caries prevalence in preschool children in DKI Jakarta (2010) 89.16% with def-t 7.02 ± 5.25, caries prevalence of children aged eight years 45.20% with *DMF-T* 0.94, index *DMF-T* child12 years old shows an average of 2.21 with a prevalence rate of 79.6%. This shows where the state of tooth decay is almost without handling (MOH 2010).

Increased health status of children is carried out in the womb, still a baby, toddler age, preschool age, and school age. This can be seen in several government programs, one of which is a nutrition improvement program for children under five. The problem of nutritional status in children, in general, is the impact of an imbalance. Between intake and expenditure of nutrients (*nutritional imbalance*), namely intake that exceeds expenditure or vice versa, in addition to errors in choosing food ingredients to eat. Chronic diseases cause the impact caused above; more and less weight can be dental caries, and allergies and others (Arisman, 2008).

The results of Ghofar's research (2015) showed that the relationship of dental caries to the nutritional status of children most of those suffering from severe or thin nutritional caries were 21 respondents (77.8%), apart from the results using *Spearman's correlation. It was* found that α = 0.00 with coefficients correlation of r = 0.869 which means that there is a relationship between dental caries and children's nutritional status, whereas from the results of Nurhaida's study (2016) showed that there was no significant correlation between dental caries and nutritional status obtained from p = 0.283 with coefficient of r = 0.066.

Research on the identification of caries risk has now been carried out in school-age children and adolescents. The existence of caries history is known as the best indicator in determining the development of caries, but the indicator cannot achieve the caries assessment target of around 80%. Based on dental caries household health survey ranked sixth most (SKRT, 2016).

Today's oral health worldwide*(WorldOral*Day)is celebrated every September 12, the problem of cavities is still the focus of attention, in a congress organized by the *Federation Dentaire Internationale* (FDI) mentions oral health is the best health areas. Based on data obtained

since (2016), tooth decay or commonly called cavities in 12-year-olds is 77%, while in Finland the number of dental caries or cavities (65%) and in Chile (62%) and also the data states that 50% of people all over the world do not brush their teeth.

Dental caries or cavities in Indonesia toothache complaints interfere with 13% of the population per month or as many as 2,620,000 residents per month. Besides, data released by the Indonesian Ministry of Health from Riskesdes (2016) showed that 72.1% of Indonesia's population had experience of cavities and 46.5% of them were active caries who had not been treated. This is greatly influenced by the still poor behavior of the Indonesian people in maintaining dental and oral health. Data shows that 91.1% of Indonesians aged ten years and over have brushed their teeth twice at the right time, that is in the morning after breakfast and the night before going to bed.

The survey of the Indonesian Dentists Association (PDGI, 2016) showed that 30% of children were toothless before the age of 12 years, of the number of toothless teeth only 0.7% had their teeth slapped. Data in Bengkulu Province alone number of dental caries in 2016 was 13,569 people, while based on data from Rejang Lebong Health Office (2015) the number of dental caries patients was 89 people for ages 5-9 years, while (2016) there were 149 people for age 5-9 years, and in (2017) there are 140 people at the age of 5-9 years. Curup Health Center data in (2017) for 144 dental caries in children aged 5-9 years, out of many of the examination samples conducted (Rejang Lebong Health Office Profile, 2017).

Based on the preliminary survey conducted by researchers on June 12, 2017, at SDN 03 Curup Kota out of 10 students who had dental caries six students who had BB and TB were thin, and four students experienced usual categories and based on data from the recapitulation of participants' health screening results. There are three of the most dental caries; the first is SD 02 Center out of 91 people 48 people who experience cavities, the second is SD 03 Curup Kota out of 58 people who have cavities and 58 people the third SD Pasar Baru 07 of 64 people 38 people who experienced cavities.

II. METHODS

This study used design *descriptive analytic* with approach *cross-sectional*. The location of this research was conducted at SDN 03 Curup Kota, Rejang Lebong Regency. The number of samples in this study was 78 children. The sampling of this study uses *total sampling technique.* Direct data collection is direct observation of respondents — data analysis using formula *Chi-square*.

III. RESULTS

Table I Distribution of Frequency of Respondents Based on Nutritional Status at SDN 03 Curup Kota in 2017

Nutritional Status	Frequency	Percentage(%)
Normal	41	52.6
Not Normal	37	47.4
Total	78	100

Table I showed that most of the respondents (52.6%) experienced normal nutritional status.

Table II Distribution of Frequency of Respondents Based on Dental Caries at SDN 03 Curup Kota in 2017

Dental health	Frequency	Percentage (%)
Caries	53	67.9
No Caries	25	23.1
number	78	100

Table II showed that most of the respondents (67, 9%) experience dental caries.

Table III Relations of Dental Health to Nutritional Status in Class I and II Children of SDN 03 Curup Kota in 2017

Dental Health	Nutritional status				Number of		*P*
	Normal		Not normal				
	n	%	n	%	n	%	
Caries	21	39.6	32	60.4	53	100	0.001
No Caries	20	80.0	5	20.0	25	100	
Total	41	52.6	37	47.4	78	100	

Table III showed that most of the 53 respondents who experienced dental caries were 32 respondents (60, 4%) who have abnormal nutritional status and a small percentage of 25 respondents who are not dental caries are 20 respondents (80.0%) who have normal nutritional status. Based on the results of the statistical test *Chi-Square*, the test results obtained ρ 0.001 <0.05, there is a relationship between dental health and nutritional status in children SDN 03 Curup Kota 2017.

IV. DISCUSSIONS

Based on the results of the research from 78 samples, it can be seen that most of the 53 respondents experienced dental caries as many as 32 respondents (60.4%) who had abnormal nutritional status and a small proportion of 25 respondents who were not dental caries were 20 respondents (80%) had normal nutritional status. Based on the results of statistical tests *Chi-Square*, the test results obtained $\rho = 0.001 < 0.05$, there is a relationship between dental health and nutritional status, the value of RP = 0.164 means that if the child has dental caries 0.164 times will experience abnormal nutritional status.

1. Nutritional Status

The results of this study indicate that most of the respondents (52.6%) experienced normal nutritional status. This result is not in line with the results of Ghofar (2017) who said that almost all nutritional status of respondents was thin (77.8%), while a small proportion of

respondents had a normal nutritional status of 4 respondents (14.8%). These results are supported by the theory of Arisman (2008) who said that the problem of children's nutritional status in broad outline is the impact of the imbalance between intake and output of nutrients, namely the intake that exceeds the output or vice versa, in addition to errors in choosing food ingredients to eat. The impact arising above is caused by chronic diseases, more and less weight, can dental caries.

2. Dental caries

The results of this study indicate that most of the respondents (67.9%) experienced dental caries. This result is supported by the theory of Machafoedz (2005) which states that dental caries occurs in many children.

Based on the results of the research Ghofar (2017) shows that almost all included in the dental caries category were 22 respondents (81.5%), while a small proportion of respondents included in the category of dental caries in the number of 5 respondents (8.5%). One aspect that is taken into consideration is that it is influenced by age, while according to research by Rini (2016), it is said that in developing countries such as Asia, including Indonesia, that children aged five years and above almost all of 80-90% experience tooth decay. These results are supported by the theory of Srigupta (2004) which states that children aged five years and over begin to eat foods that are prohibited and the period most children suffer from dental dentine caries may be due to irregular eating patterns and ignorance to maintain dental health so that it can cause caries tooth.

The Relationship of Dental Health to Nutritional Status

Based on the results of research from 78 samples it can be seen that most of the 53 respondents who experienced dental caries were 32 respondents (60.4%) who had abnormal nutritional status and a small portion of 25 respondents who were not dental caries as many as 20 respondents (80%) had normal nutritional status. Samples that experienced dental caries with abnormal nutritional status showed a large number of 32 respondents (60.4%). Based on statistical test *Chi-Square*, the test results obtained $\rho = 0.001 < 0.05$, there is a relationship between dental health and nutritional status in children in grade I and II SDN 03 Curup Kota, this tends to be in accordance with the results of research conducted by Ghofar (2017) Previously, it was shown that from the results of the analysis between dental caries with nutritional status there was a significant relationship. The caries sample showed that almost all of the respondents from 21 people (77.8%) had abnormal nutritional status, while the sample that did not experience dental caries showed a small percentage of respondents from 3 people (3.7%) had normal nutritional status. The results of the analysis using the technique *Spearman's correlation* obtained a value of $p < 0.00$ which means that there is a relationship between variables of dental caries and nutritional status. The results of the study obtained by Asrianti (2013) showed that the mean BMI at low caries severity was higher than the average BMI at high dental caries severity (15,2498 kg / m^2 and 14,4191 kg / m^2 , respectively), Independent t-test results showed a significant relationship $\rho < 0.05$. These results are supported by the theory of Setiawan (2003) which states that children with high caries severity tend to have an energy and protein intake of approximately 80% of the recommended level of nutritional adequacy and this affects the nutritional status of children.

This study found 78 samples which met the exclusion criteria. The data in table 4.1 shows that the majority of respondents (67.9%) had dental caries. This is in line with research conducted by Noerwida (2005), this study was conducted on 64 kindergarten students in Pagersari Village, Paten Subdistrict, Kendal Regency, which overall had caries prevalence of 100%, the same thing also according to the results of Ruhaya's research (2017) in Kelantan Malaysia examined the relationship between nutritional status and ECC in preschool children found that a low body mass index was associated with caries. Dental caries can cause eating difficulties in children because dental caries causes a decrease in dental function as a digestive device, as revealed by Junaidi (2016), eating difficulties in children can be caused by various factors, namely: nutritional, disease and psychological factors. Disease factors include abnormalities in the teeth and oral cavity such as dental caries, stomatitis, and gingivitis, in this study caries were more in the group of children aged 48-60 months compared to the group 36-47 months. This is by the theory put forward by Suwelo (1992) that in line with a person's age, the number of carries will increase. This is clear because the risk factors for carries will affect the teeth longer; in this study also shows that caries is more in girls than boys. This is consistent with the opinion of Suwelo (1992) that the prevalence of caries in girls 'milk teeth is slightly higher than that of boys because girls' teeth are longer in the mouth. As a result, girls' teeth will be associated with longer risk factors for caries.

V. CONCLUSION

There is a relationship between dental health and nutritional status in children SDN 03 Curup Kota 2017.

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