



## **THE RELATIONSHIP BETWEEN DENTAL CARIES AND QUALITY OF LIFE IN CHILDREN AT SDN 44 BANDA ACEH**

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### **ABSTRACT**

Background : Untreated dental caries can cause pain, eating disorders, sleep disorders, and even psychological problems in children. Based on the results of the examination, it was found that 1 child did not have caries and 9 children had caries. The aim of this study was to determine the relationship between dental caries and quality of life in children. Research Method : Using analytical methods with a cross sectional design, which was carried out from 18 to 21 March 2024, the sample in this study was carried out using proportional sampling. The analysis used the chi-square test  $\alpha=0.05$ . Research Results : Shows that children who experience caries have the highest quality of life in the good category, as many as 31 respondents (51.7%). Children who did not have caries had the highest quality of life in the good category, 11 respondents (100%). Conclusion : There is a relationship between dental caries and quality of life in children with a p-value of 0.011. Suggestion : It is recommended that students maintain healthy teeth by brushing their teeth at least twice a day to avoid cavities.

**Keywords: Quality of life, dental caries, children**

### **INTRODUCTION**

Health is the condition of an individual who is healthy, both physically, mentally, spiritually and socially, which enables everyone to live a productive life socially and economically. Dental and oral health is often the number one priority for some people, even though the teeth and mouth are the gateway for germs and bacteria to enter and can disrupt the health of other body organs (Ministry of Health of the Republic of Indonesia, 2014).

Oral health is a very important perspective for general health. A dental health problem that often occurs in school-age children is damage to the hard tissue of the teeth, which is usually called caries (Susilawati et al. 2023).

Dental caries is a major problem in children's oral cavities. School-aged children are a group that is vulnerable to dental and oral diseases because generally these children still have poor behavior or habits regarding dental and oral health. Untreated dental caries can cause pain and even infection of the teeth. If this happens to children, it can cause masticatory disorders resulting in reduced nutritional intake, decreased body weight, as a result the child's growth and development is not optimal (Haryani et al. 2021).

To date, dental caries is still a major problem in dental and oral health, especially in school-aged children. The 2013 Indonesian Ministry of Health Survey Report stated that, among the diseases that were complained about and those that were not complained about, the prevalence of dental and oral diseases was the highest, covering 60% of the Indonesian population. This is because in the oral cavity of children at that age there are still mixed teeth. Apart from the mixed dentition period, children's behavior and habits are also one of the factors causing the high rate of dental caries. Eating a lot of chocolate and candy and not paying attention to oral hygiene can cause children's teeth to be susceptible to caries. High cariogenic consumption patterns such as chocolate, bread and sweets are one of the causes of dental caries (Sri Utami et al. 2019).

Dental caries is caused by several factors or components that interact with each other, namely tooth and saliva components, microorganism components, Streptococcus and Lactobacillus, and cariogenic foods. Other causes of tooth decay include improper brushing habits, lack of dental health care, poor quality of life and never having your teeth checked by a dentist. If dental caries is not treated properly it will cause pain, tooth loss and infection (Guarango 2022).

Elementary school children aged 6-12 years are often referred to as a vulnerable period, because at that time the milk teeth begin to fall out one by one and the first permanent teeth begin to grow (aged 6-8 years). The presence of different milk teeth and permanent teeth in the same mouth indicates a mixed dentition period in children. Newly erupted teeth are not yet mature so this can cause damage to the teeth (Amiri et al. 2020).

Advanced dental caries can affect a person's health and quality of life, causing pain, difficulty sleeping and eating, low body mass index, missing school, and even hospitalization. Poor oral health, such as a large number of teeth due to decay or missing teeth due to untreated trauma, will disrupt the function and function of the oral cavity, thereby also affecting the child's growth and development, thereby impacting the child's quality of life (Nurwati et al. 2019).

The concept of quality of life related to dental and oral health has now become an important measure for assessing the status of dental and oral health in children and adults. Dental caries-related quality of life is defined as a multidimensional concept that includes subjective evaluation of an individual's oral health, well-being, functional limitations, expectations and satisfaction with treatment (Haryani et al. 2021).

According to WHO in 2012, quality of life is a person's opinion about their position in life in the culture and norms that are appropriate to the environment in which they live. Quality of life measurements include physical health, mental health, level of freedom, social relationships and relationships with the environment.

Quality of life related to oral health can be measured with instruments. Instruments that can be used to assess the impact of dental and oral disease on children's functional, social and psychological well-being are the Children's Perception Questionnaire (CPQ), Children's Oral Health Impact Profile (COHIP) and Children's Speech Effects on Daily performance (Child-OIDP). The most frequently used instrument is the Child Perceptions Questionnaire (CPQ) because it has been tested and validated in several countries including developed, developing and underdeveloped countries (Apro et al. 2018).

Child perceptions questionnaires (CPQ) were developed in Canada between 2002-2006 to measure quality of life related to oral health in certain age groups with various dental, orthodontic and orofacial conditions. Child perceptions questionnaires (CPQ) is a questionnaire filled in by the child himself. This instrument has been widely reported on the validity and reliability of its use by various previous researchers (Fuad et al. 2019).

The relationship between caries and quality of life has been investigated in a study conducted by Karamoy in 2017 on the relationship between caries and quality of life showing that there is a significant relationship between dental caries and poor quality of life. The same thing was also obtained from research by Yani et al in 2017 regarding the relationship between dental caries and the quality of life of children aged 8-10 years in Indonesia, showing that there is a negative relationship between dental caries and children's quality of life, which means that the higher the caries value, the lower the quality. the child's life. Pain due to caries can cause discomfort which can disrupt daily activities such as difficulty chewing food, sleep disturbances, decreased motivation to study and not wanting to socialize (Apro et al. 2018).

Quality of life refers to a person's ability to enjoy normal life activities. A healthy lifestyle is part of the quality of life, so being healthy does not only

mean being physically healthy, but also mentally and socially healthy. Oral health is an inseparable part of general health because dental and oral health conditions can affect daily life (Hendry Boy 2019).

According to the 2018 Basic Health Survey of the Ministry of Health (Riskesdas), the prevalence of people with dental and oral problems in Indonesia is damaged/caved/sick teeth (45.3%). Based on age group, the prevalence of tooth decay, caries or disease is 54% in the 5-9 year age group and 41.4% in the 10-14 year age group. Meanwhile, the national caries prevalence is 92.6% in the 5-9 year age group and 73.4% in the 10-14 year age group. This means that in 2018 the majority of children aged 5-9 years in Indonesia experienced high caries problems. This fact shows that there are still many dental and oral problems in school-aged children.

Based on data from the Ulee Kareng Health Center in 2022, 93.2% of students experienced dental caries problems at SD Negeri 44 Banda Aceh and 6.8% of them had no caries. During initial data collection, researchers examined 10 students at SD Negeri 44 Banda Aceh. Based on the results of the initial data examination, it was found that 1 child did not have caries and 9 children had caries, of which 5 children had pulp caries and 4 others had dentin caries with a high level of severity with a score of 5.5. Based on the results of interviews conducted with 9 students who experienced dental caries, 4 of them had complaints of difficulty chewing and food getting in their teeth, 5 students did not go to school because of toothache and difficulty sleeping. Therefore, researchers are interested in conducting research on the relationship between dental caries status and quality of life in children at SD Negeri 44 Banda Aceh.

## **METHODS**

This research was conducted using analytical methods with a cross sectional design, namely to determine the relationship between dental caries and quality of life in children at SD Negeri 44 Banda Aceh. The population of this study was all children at SD Negeri 44 Banda Aceh, totaling 249 students. In this research, the sample used was the proportional sampling technique and the students as research objects were 71 students. This research was conducted at SD Negeri 44 Banda Aceh. Research Time This research was conducted from 18 to 21 March 2024. The instruments used to support this research were a questionnaire sheet, dental caries KSP and a diagnostic tool set. Data obtained directly by conducting interviews using a questionnaire regarding quality of life and dental caries examination in children at SDN 44 Banda Aceh. Bivariate data analysis of the independent variable (dental

caries) with the dependent variable (quality of life) to determine the relationship between dental caries and quality of life in children at SDN 44 Banda Aceh (Sarwono et al. 2021). The bivariate analysis used is Chi-Square analysis.

## RESULTS AND DISCUSSION

### Research Results

This research was carried out in March 2024 at SDN 44 Banda Aceh, the sample in this research was 71 students. Based on the results of data processing, the relationship between dental caries and quality of life in children at SDN 44 Banda Aceh is as follows:

**Table 1**  
**Frequency Distribution Of Dental Caries In Elementary School Children at SDN 44 Banda Aceh**

No	Caries Status	Frequency	Percent
1	Caries	60	84,5
2	Not carious	11	15,5
Amount		71	100

Based on table 1 above, it explains that students at SDN 44 Banda Aceh most often experience dental caries problems with a proportion of 84.5%.

### b. Quality of life

**Table 2**  
**Frequency distribution based on children's quality of life at SDN 44 Banda Aceh**

No	Quality of Life	Frequency	Percent
1	Good	42	59,2
2	Currently	20	28,2
3	Bad	9	12,7
Amount		71	100

Based on table 2, the frequency distribution of children's quality of life at SDN 44 Banda Aceh above, the highest quality of life was in the good category, 42 respondents (59.2%).

**Table 3**  
**The relationship between dental caries and the quality of life of children at SDN 44 Banda Aceh**

No	Dental Caries	Quality Of life						Total	%	P-Value
		Good	%	Currently	%	Bad	%			
1	Caries	31	51,7	20	33,3	9	15,0	60	100	$\alpha = 0,05$ Df = 2 P = 0,011
2	Not carious	11	100	0	0	0	0	11	100	
<b>Amount</b>		<b>42</b>	<b>59,2</b>	<b>20</b>	<b>28,2</b>	<b>9</b>	<b>12,7</b>	<b>71</b>	<b>100</b>	

Based on table 3 above, 31 respondents (51.7%) have the highest quality of life in the good category. Children who did not have caries had the highest quality of life in the good category, 11 respondents (100%).

Based on the Chi-square test, the p value was 0.011 ( $p < 0.05$ ), so it can be concluded that there is a significant relationship between dental caries and quality of life in children.

## CONCLUSION

Based on the results of the research and discussion, it can be concluded that there is a relationship between dental caries and quality of life in children at SDN 44 Banda Aceh with the results of the Chi-square test obtaining a p-value of 0.011 ( $p < 0.05$ ).

## ACKNOWLEDGEMENT

Based on the results of the discussion and conclusions, the suggestions from the researchers are as follows:

1. It is hoped that students at SDN 44 Banda Aceh will maintain healthy teeth by brushing their teeth at least twice a day to avoid cavities.
2. It is hoped that health workers can provide education to students at SDN 44 Banda Aceh about the importance of preventing dental caries in order to maintain oral hygiene in school age students.

3. Other researchers can carry out this research with different variables and can add data from local health centers to make it clearer and more accurate.

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