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**Knowledge About Dental Caries Among Sixth Grade Students at SDN 1
Kedungkumpul, Sukorame, Lamongan**

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ABSTRACT

Background: Dental caries is damage that is limited to tooth tissue starting from tooth enamel to spreading to dentin (tooth bone). The problem of this research is the low knowledge of students about caries in grade VI students at SDN 1 Kedungkumpul Sukorame Lamongan.

Object: The purpose of this study is to determine the description of knowledge about dental caries in grade VI students of SDN 1 Kedungkumpul Sukorame Lamongan in 2024. **Method:** The data collection method used a questionnaire sheet that was distributed to grade VI students of SDN 1 Kedungkumpul Sukorame Lamongan. The type of research used is descriptive research with a cross-sectional approach. The target of this study was all grade VI students at SDN 1 Kedungkumpul Sukorame Lamongan as many as 36 students. The data analysis technique used in this study was percentage. **Results:** The results of the study showed that the knowledge of grade VI students at SDN 1 Kedungkumpul Sukorame Lamongan was included in the sufficient category.

Keywords: Knowledge, Dental Caries, Student

BACKGROUND

Oral and dental health is a component of general health and an important factor in a child's normal growth. The problem of dental caries in early childhood is important because dental caries is an indicator of the success of child dental health maintenance efforts. The function of teeth is crucial during childhood for chewing, supporting facial aesthetics, and particularly, primary teeth serve as a guide for the growth of permanent teeth (Nugraheni et al., 2019). The 2018 Basic Health Research (Riskesdas) results state that the largest proportion of dental problems in Indonesia is damaged, decayed, or aching teeth, at 45.5%. In Indonesia, 29.8% of the 6-12 year age group suffers from dental caries. The prevalence of the Indonesian population experiencing damaged, decayed, or aching teeth in 2018 was 41.4%. Childhood,

particularly the elementary school age, is the most vulnerable period for the occurrence of dental caries (Nabila et al., 2023).

Tooth decay is a destructive disease of the hard tissues of the tooth that progresses from the outer layers to the inner pulp. Its development is linked to several factors, including the consumption of carbohydrates, the presence of specific bacteria like *Streptococcus mutans* and *Lactobacillus*, and the condition of the tooth's surface and saliva. If this disease is left unmanaged, the consequences include severe pain, eventual tooth loss, and the spread of infection (Sukarsih et al., 2019). Dental caries can cause gum abscesses, leading to a child's loss of chewing ability and a disrupted digestive system, which in turn affects the child's health and learning concentration both at school and at home

(Hadi et al., 2021). Based on the results of the School Dental Health Program (UKGS) screening conducted by the Sukorame Lamongan Public Health Center on August 3, 2024, at SDN 1 Kedungkumpul Sukorame Lamongan for the year 2023, located in Paluombo Hamlet, Kedungkumpul Village, Sukorame District, Lamongan Regency, it was found that out of 36 6th-grade students, 28 students (78%) had dental caries, while 8 students (22%) were caries-free.

This result does not meet the long-term target of the 2020 UKGS program, as set by the Ministry of Health of the Republic of Indonesia, which is a caries-free percentage of $\geq 70\%$. The low percentage of caries-free 6th-grade students at SDN 1 Kedungkumpul Sukorame Lamongan is likely due to several factors: the students themselves (knowledge, attitude, behavior, habits), parental factors (education, socioeconomic status), teacher factors (knowledge), and finally, health worker factors (counseling).

Health workers have implemented the UKGS program, consisting of health education and dental check-ups for students at SDN 1 Kedungkumpul Sukorame Lamongan. These activities are routinely conducted at least once every six months; however, during the pandemic, counseling was only conducted once a year. This shows that the 6th-grade students at SDN 1 Kedungkumpul Sukorame Lamongan had previously received insufficient counseling and dental examinations. Based on interviews with 9 students, where only 3 students (33%) answered correctly and 6 students (66%) answered incorrectly, it can be concluded that the students' knowledge about caries at SDN 1 Kedungkumpul Sukorame Lamongan is in the low category.

Therefore, the researcher became interested in studying the knowledge of dental caries among 6th-grade students at SDN 1 Kedungkumpul Sukorame Lamongan. Based on the description above, the problem identified is the low percentage of caries-free students, because the

screening results at SDN 1 Kedungkumpul Sukorame Lamongan were lower than the UKGS target of $\geq 70\%$.

RESEARCH METHODE

The type of research used in this study is descriptive with a cross-sectional approach. This study describes the knowledge about dental caries among sixth-grade students at SDN 1 Kedungkumpul, Sukorame, Lamongan. The target of this study is all sixth-grade students at SDN 1 Kedungkumpul, Sukorame, Lamongan, totaling 36 students. The research location is at SDN 1 Kedungkumpul, Sukorame District, Lamongan Regency. This study was conducted from September 2024 to November 2024. The instrument for data collection in this study was a questionnaire form.

Data collection technique used to obtain knowledge about dental caries employs a questionnaire after obtaining permission from the school principal to conduct research at SDN 1 Kedungkumpul, Sukorame, Lamongan, coordinating with teachers to determine the research dates, preparing the questionnaire, informed consent, and calibration / aligning perceptions using an emulator. Activities began with giving instructions on how to complete the questionnaire by putting a cross (X) on the chosen answer, then students filled out the questionnaire, and after completion the questionnaire sheets were collected by the researcher.

The data analysis technique used in this study is percentage. The knowledge score about dental caries obtained by respondents is calculated, then the number of correct answers is divided by the total number of questions and multiplied by one hundred for the knowledge variable in each category.

RESULT AND DISCUSSION

Table 1.

Distribution of Student and Parent Characteristics at SDN 1 Kedungkumpul in 2024

No.	Category	Total	Percentage
Gender			
1.	Male	14	38,9%
	Female	22	61,1%
Age			
2.	11 years old	16	44,4%
	12 years old	20	55,6%
Total		36	100%

Based on Table 1., the majority of respondents at SDN 1 Kedungkumpul Sukorame were female, totaling 22 students

(61.1%). Based on age, most respondents were 12 years old (55.6%).

Table 2.

Frequency Distribution of Knowledge about the Definition of Dental Caries among Sixth

No.	Declaration	Respondent's Correct Answer	
		Correct(%)	Wrong(%)
1.	Meaning of Dental Caries	14 (38,9%)	22 (61,1%)
2.	Synonym of Dental Caries	22 (61,1%)	14(38,9%)
3.	Characteristics of Dental Caries	15(41,7%)	21(58,3%)
Total		51(141,7%)	57(158,3%)
Average		17(47,3%)	19(52,7%)
Category		poor	

Based on Table 2. it can be seen that the average knowledge about the definition of dental caries among sixth-grade students at SDN 1 Kedungkumpul falls into the "poor" category (47.3%). Most respondents knew how to identify dental caries, with 22

students (61.1%), but many respondents were still unaware of what is meant by dental caries, also totaling 22 students (61.1%).

Table 3.

Frequency Distribution of Knowledge about the Causes of Dental Caries among Sixth Grade Students at SDN 1 Kedungkumpul, Sukorame, Lamongan in 2024

No.	Declaration	Respondent's Correct Answer	
		Correct (%)	Wrong(%)
1.	Cause of Dental Caries	15(41,7%)	21(58,3%)
2.	Because of eating sweet and sticky foods too often	26(72,2%)	10(27,8%)
3.	Including causes of dental caries, except	21(58,3%)	15(41,7%)
4.	Habits that can cause dental caries	25(69,4%)	11(30,6%)
Amount		87(241,6%)	57(158,4%)
Average		21,7(60,4%)	14,3(39,6%)
Total		fair	

Based on Table 3. it can be seen that the average knowledge regarding the causes of dental caries among sixth-grade students at SDN 1 Kedungkumpul falls into the "moderate" category (60%). Most respondents knew about the effects of

frequently consuming sweet and sticky foods, with 26 students (72.2%), but many respondents were still unaware of the causes of dental caries, totaling 21 students (58.3%).

Table 4.

Frequency Distribution of Knowledge about the Prevention of Dental Caries among Sixth Grade Students at SDN 1 Kedungkumpul, Sukorame, Lamongan in 2024

No.	Declaration	Respondent's Correct Answer	
		Correct (%)	Wrong(%)
1.	A dental and oral examination should be performed	25(69,4%)	11(30,6%)
2.	Treatment of dental caries	24(66,6%)	12(33,4%)
3.	The optimal time to brush one's teeth	11(30,6%)	25(69,4%)
4.	Brushing teeth correctly	19(52,8%)	17(47,2%)
5.	What you do after eating sweet foods	31(86,1%)	5(13,9%)
6.	A good food source to consume for strengthening teeth is one that contains a lot of	27(75%)	9(25%)

No.	Declaration	Respondent's Correct Answer	
		Correct (%)	Wrong(%)
7.	Besides consuming sweet and sticky foods, which can cause dental caries	30(83,3%)	6(16,7%)
8.	Foods that cause tooth decay	28(77,8%)	8(22,2%)
9.	Treatment of teeth that are already damaged and cannot be restored due to dental caries	20(55,6%)	15(44,4%)
Amount		215(597,2%)	109(302,8%)
Average		23,9(66,4%)	12,1(33,6%)
Category		fair	

Based on Table 4. it can be seen that the average knowledge regarding the prevention of dental caries among sixth-grade students at SDN 1 Kedungkumpul falls into the "moderate" category (66.4%). Almost all respondents knew what should

be done after consuming sweet foods, with 31 students (86.1%), but many respondents were still unaware of the proper time to brush their teeth, totaling 25 students (69.4%).

Table 5.

Frequency Distribution of Knowledge about the Consequences of Dental Caries among Sixth Grade Students at SDN 1 Kedungkumpul, Sukorame, Lamongan in 2024

No.	Declaration	Respondent's Correct Answer	
		Correct (%)	Wrong(%)
1	Consequences of untreated dental caries	16(44.4%)	20(55,6%)
2	Consequences of the pain caused by dental caries	21(58,3%)	15(41,7%)
3	Impact of dental caries	18(50%)	18(50%)
4	Severe (advanced) dental caries can cause	20(55,6%)	16(44,42%)
Amount		75(208,3%)	69(191,7%)
Average		18,7(52%)	17,3(48%)
Category		poor	

Based on Table 5. it can be seen that the average knowledge about the consequences of dental caries among sixth-grade students at SDN 1 Kedungkumpul falls into the “poor” category (52%). Half of the respondents (18 students or 50%) were aware of the impacts of dental caries, but most respondents were still unaware of the consequences of untreated dental caries, totaling 20 students (55.6%). Based on

Table 5. it can be seen that the average knowledge about the consequences of dental caries among sixth-grade students at SDN 1 Kedungkumpul falls into the “poor” category (52%). Half of the respondents (18 students or 50%) were aware of the impacts of dental caries, but most respondents were still unaware of the consequences of untreated dental caries, totaling 20 students (55.6%).

Table 6.

Recapitulation of Data on Knowledge of Dental Caries among Sixth Grade Students at SDN 1 Kedungkumpul, Sukorame, Lamongan

No.	Declaration	Respondent's Correct Answer	
		Correct (%)	Wrong(%)
1	Knowledge about the definition of dental caries	(47,3%)	(52,7%)
2	Knowledge about the causes of dental caries	(60,4%)	(39,6%)
3	Knowledge about the prevention of dental caries	(66,4%)	(33,6%)
4	Knowledge about the consequences of dental caries	(52%)	(48%)
Amount		(226,1%)	(173,9%)
Average		(56,5%)	(43,5%)

The compiled assessment results from the four specific objectives concerning dental caries—namely knowledge of its definition, causes, prevention, and consequences—reveal that the 36 sixth-grade students surveyed at SDN 1 Kedungkumpul in 2024 exhibited a "moderate" level of knowledge (56.5%).

Discussion

Based on the results of data analysis of respondents' understanding of the definition of dental caries among sixth-grade students at SDN 1 Kedungkumpul, it was found that their knowledge falls into the low category. Most respondents know

the definition of dental caries; however, many are still unaware of the synonyms of dental caries and the characteristics of teeth affected by caries. The lack of knowledge is due to incomplete information about the definition of dental caries and its symptoms provided by health workers during counseling and from parents.

Based on the results of the data analysis of respondents' knowledge about the causes of dental caries, it was found that their knowledge falls into the moderate category. This is because most respondents know the effects of frequently consuming sweet and sticky foods, but many still do

not know the actual causes of dental caries. The moderate level of knowledge about the causes of dental caries is influenced by the students' personal experiences related to the effects of consuming sweet and sticky foods too often.

Based on the results of the data analysis of respondents' knowledge about the prevention of dental caries, it was found that their knowledge is in the moderate category. This is because many respondents know what actions should be taken after eating sweet foods, but half of them still do not know how to brush their teeth properly. The moderate level of knowledge about dental caries prevention is influenced by the presence of advertisements in mass media about how to prevent dental caries, such as using fluoride toothpaste and reducing the consumption of sweet and sticky foods.

Based on the results of the data analysis of respondents' knowledge about the consequences of dental caries, it was found that their knowledge is in the low category. This is because many respondents answered incorrectly regarding the consequences of untreated dental caries. The lack of knowledge about the consequences of dental caries is due to parents' low awareness and insufficient knowledge about children's dental health, as well as the limited educational programs in the school.

CONCLUSION

The study results show that the students' knowledge concerning the definition and consequences of dental caries was classified in the low category. Conversely, their knowledge of both the causes and prevention of dental caries fell into the moderate category.

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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