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Knowledge of Dental and Oral Hygiene Using Flashcard Media in Class IV Elementary School Children (Study at SDN Jajar Tunggal III)

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ABSTRACT

Background: The behavior of Indonesian children in maintaining dental and oral health is still low. The factors that cause poor dental and oral hygiene in elementary school students are the environment, the influence of the school environment also plays a very important role in the development of knowledge in students. **Object:** The problem of this study is the high OHI-S in grade IV students of SDN Jajar Tunggal III Surabaya. The purpose of this study is to find out the knowledge of dental and oral hygiene with the use of flash card media in grade IV students at SDN Jajar Tunggal III Surabaya. **Method:** This research method is descriptive research. The target in this study was grade IV students of SDN Jajar Tunggal III Surabaya with 40 respondents. The method of data collection was using a questionnaire sheet. The data analysis technique in this study after filling out the questionnaire, the data collected from the questionnaire was processed scoring. Each answer will be categorized and calculated for data analysis. The total number of respondents' answers that have been calculated as a percentage will be presented in the form of a table. **Results:** The results of this study show that the knowledge of dental and oral hygiene with the use of flash card media in grade IV students at SDN Jajar Tunggal III Surabaya is included in the good category.

Keywords: Knowledge, Flash Card, Media, Elementary School, Children, OHI-S

BACKGROUND

Dental and oral health for every child can be improved through maintaining good and correct dental and oral health. Children in the school-age phase are in a crucial stage of physical growth and development. This stage is often referred to as a critical period because it is when they start forming habits that typically continue into adulthood. One such habit is taking care of their oral and dental health. Indonesian children still show poor habits when it comes to caring for their teeth and mouth. Many view dental care as insignificant, even though it plays an essential role in preserving oral health and appearance (Nurhalisah, 2023).

Based on Riskesdas in 2022, 98.3% brush their teeth every day and as many as

97.7% behave incorrectly regarding their toothbrushing behavior. This shows that there is still a lack of knowledge about brushing teeth in the community. According to the WHO OHI-S standard, it is said to be in the good category (0-1.2) while the moderate category is (1.3-3.0) and the poor category (3.1-6.0).

The results of the initial survey in September 2024 at SDN Jajar Tunggal III for grade IV children showed that 93.33% of respondents were in the moderate dental hygiene category, and 6.67% of respondents were in the good dental hygiene category. One factor contributing to inadequate dental and oral hygiene among elementary students is their environment. The school setting, in

particular, has a significant influence on shaping students' knowledge and understanding (Fauzi et al., 2022).

Students' knowledge of dental and oral hygiene is an important factor in achieving good OHI-S scores according to predetermined criteria. Knowledge is one of the internal factors that influences the formation of actions based on knowledge which will be better than behavior that is not based on knowledge (Ulfa, 2020).

The knowledge taught through good and correct tooth brushing simulations allows each child to independently carry out the action of brushing their teeth correctly. Dental health education is necessary to help improve oral and dental hygiene. It involves planned and structured efforts aimed at encouraging children to shift from unfavorable behaviors to more beneficial ones in relation to dental health, ultimately enhancing their overall quality of life (Maramis et al., 2023).

The aim of this research is to analyze the suitability of *flash cards* media for elementary school children. Many media in teaching require teachers to be selective in choosing the media that will be used in classroom learning. Students in class may become inactive, one of which is the inappropriate choice of learning media. One way is by implementing cooperative learning *flash cards* Through the use of

this media, it is expected that students' understanding will improve, as cooperative learning reflects the way people interact and work together in society (Ulfa, 2020).

The use of the *flash card* game is very appropriate for increasing the development of elementary school children's knowledge and training children to be orderly in participating in learning. Therefore, it is recommended for young children to apply the *flash card* game to help develop early childhood knowledge. In previous research, flash cards can increase children's knowledge development (Ulfa, 2020).

Based on the background above, the aim is to determine knowledge of dental and oral hygiene using *flash card* media in class IV children at SDN Jajar Tunggal III.

RESEARCH METHODS

The type of research used is descriptive. This research was conducted at SDN Jajar Tunggal III Surabaya in 2024 which is located on Jl. Raya Menganti NO. 17, Jajar Tunggal, Wiung District, Surabaya City. This research was conducted from August to March. Using elementary school children's knowledge about dental hygiene using *flash card media*.

Table 1.
Operational Definition

No	Variable	Operational Definition	Measuring instrument	Indicator	Research Criteria
1	Students' knowledge about dental and oral hygiene. Using flash card media	Everything that fourth grade students know about dental and oral hygiene after and before	Questionnaire	Knowing the benefits of keeping your teeth and mouth clean	True = 1 False = 0 Knowledge assessment criteria are included in the Categories Good : 75-100% Fair : 56-74% Poor : <56%

No	Variable	Operational Definition	Measuring instrument	Indicator	Research Criteria
		using flash card media		Knowing how to keep your teeth and mouth clean Knowing the foods that affect dental hygiene Knowing the consequences of not keeping your teeth clean	

The population of this study was 40 grade IV students at SDN Jajar Tunggal III Surabaya. Sampling in this study used the total *sampling technique*. The sample size

in this study was all fourth grade students at SDN Jajar Tunggal III Surabaya.

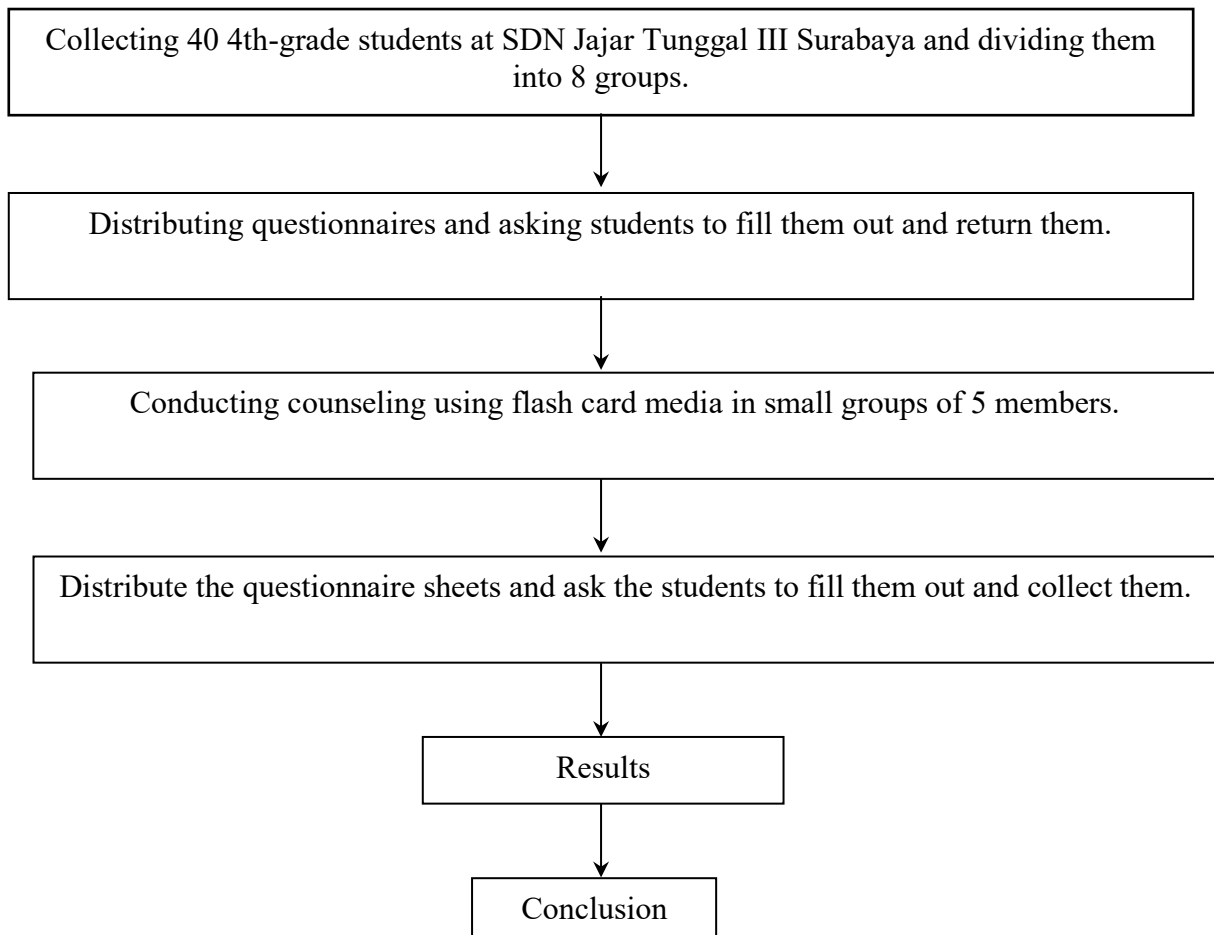


Figure 1. Research Flow

The data collection method uses a questionnaire. The instrument used for this research was an instrument in the form of a questionnaire sheet. After filling in the questionnaire, data collected from the questionnaire is processed for scoring. Each answer will be categorized and calculated for data analysis. The total number of respondents' answers which have been calculated in percentages will be presented in table form.

Raya Menganti No. 17 Jajar Tunggal, Kec. Wiyung, Surabaya, East Java 60229. The closest health facility to SDN Jajar Tunggal III is the Wiyung Health Center which is approximately 1.9km away. By using *flash card* media, this researcher assessed students' knowledge before and after providing counseling regarding dental and oral hygiene knowledge to class IV students at SDN Jajar Tunggal III Surabaya through *flash card media*. This research was conducted in June 2025 at SDN Jajar Tunggal III Surabaya with a total of 40 students as respondents.

RESULTS AND DISCUSSION

This research was conducted at SDN Jajar Tunggal III Surabaya which is located on Jl.

Table 2.

Frequency Distribution Based on Gender and Age of Class IV Students at SDN Jajar Tunggal III Surabaya in 2025.

Characteristics	Amount	Percentage %
Gender		
Man	25	63%
Woman	15	37 %
Age		
10	35	88%
11	5	12%

The data in table 2 shows that the gender of the respondents in this study was 25 men with a total of 63% and 15 women with a total of 37%. The age category is dominated

by 10 year olds with a total of 88%, while 11 year olds are dominated by 12%.

Table 3.

Frequency Distribution of Students' Knowledge About Maintaining Dental and Oral Hygiene Before Using *Flash Card* Media in Class IV Students of SDN Jajar Tunggal III Surabaya in 2025.

N=40 Respondents

No.	Question	Correct		Wrong		Criteria
		Σ	(%)	Σ	(%)	
1.	What is the purpose of brushing teeth?	20	50	20	50	Good : 75-100% Fair :
2.	What are the benefits of maintaining healthy teeth and mouth?	8	20	32	80	

No.	Question	Correct		Wrong		Criteria	
		Σ	(%)	Σ	(%)		
3.	What is one problem that will arise if your teeth and mouth are dirty?	6	15	34	75	56-74% Poor : <56%	
4.	What happens if you don't brush your teeth?	2	5	38	95		
5.	How many times do you brush your teeth at least a day?	10	25	30	75		
6.	When is it time to brush your teeth in the morning?	16	40	24	60		
7.	When is the right time to check your teeth?	12	30	28	70		
8.	What foods can damage teeth?	30	75	10	25		
9.	What foods should be avoided to maintain healthy teeth?	20	50	20	50		
10.	What foods contain fiber and are watery?	14	35	26	65		
11.	What are the consequences if you don't clean food debris stuck to your teeth?	10	25	30	75		
Amount		150	375	292	720		
Average		14	34	26	65		
Knowledge Criteria		Not enough					

Based on table 3, it can be seen that the majority of class IV students at SDN Jajar Tunggal III Surabaya before counseling was conducted on dental and oral hygiene using the media *flash cards*

had insufficient knowledge with an average of 34% in the poor category. And 65% of respondents do not know about good and correct dental hygiene knowledge.

Table 4.

Frequency Distribution of Students' Knowledge About Maintaining Dental and Oral Hygiene After Using *Flash Card* Media in Class IV Students of SDN Jajar Tunggal III Surabaya in 2025.

N=40 Respondents

No.	Question	Correct		Wrong		Criteria
		Σ	(%)	Σ	(%)	
1.	What is the purpose of brushing teeth?	38	95	2	5	Good :

No.	Question	Correct		Wrong		Criteria
		Σ	(%)	Σ	(%)	
2.	What are the benefits of maintaining healthy teeth and mouth?	34	85	6	15	75-100% Fair: 56-74% Poor: <56%
3.	What is one problem that will arise if your teeth and mouth are dirty?	36	90	4	10	
4.	What happens if you don't brush your teeth?	32	80	8	20	
5.	How many times do you brush your teeth at least a day?	30	75	10	25	
6.	When is it time to brush your teeth in the morning?	36	90	4	10	
7.	When is the right time to check your teeth?	22	55	18	45	
8.	What foods can damage teeth?	30	75	10	25	
9.	What foods should be avoided to maintain healthy teeth?	40	100	0	0	
10.	What foods contain fiber and are watery?	34	85	6	15	
11.	What are the consequences if you don't clean food debris stuck to your teeth?	30	75	10	25	
Amount		362	905	78	190	
Average		33	83	7	17	
Knowledge Criteria		Good				

Based on table 4, it can be seen that the majority of class IV students at SDN Jajar Tunggal III Surabaya after counseling on dental and oral hygiene using *flash card* media had knowledge with an average of

83% in the good category. And 17% of respondents did not know about good and correct dental hygiene knowledge.

Table 5.
Recapitulation of Dental and Oral Hygiene Knowledge Results Using the Media *Flash Card*
Class IV Students of SDN Jajar Tunggal III Surabaya.

No.	Question	Before		After		Criteria
		Σ	(%)	Σ	(%)	
1.	What is the purpose of brushing teeth?	20	50	38	5	Good : 75-100% Fair : 56-74% Poor :<56%
2.	What are the benefits of maintaining healthy teeth and mouth?	8	20	34	15	
3.	What is one problem that will arise if your teeth and mouth are dirty?	6	15	36	10	
4.	What happens if you don't brush your teeth?	2	5	32	20	

No.	Question	Before		After		Criteria
		Σ	(%)	Σ	(%)	
5.	How many times do you brush your teeth at least a day?	10	25	30	25	
6.	When is it time to brush your teeth in the morning?	16	40	36	10	
7.	When is the right time to check your teeth?	12	30	22	45	
8.	What foods can damage teeth?	30	75	30	25	
9.	What foods should be avoided to maintain healthy teeth?	20	50	40	0	
10.	What foods contain fiber and are watery?	14	35	34	15	
11.	What are the consequences if you don't clean food debris stuck to your teeth?	10	25	30	25	
Amount		150	375	362	905	
Average		14	34	33	83	
Category		Not enough		Good		

Based on table 5, it states that the data obtained before counseling was carried out using *flash card* media had poor knowledge, namely with an average percentage of 34%, and after counseling was carried out using *flash card* media, they had an average level of knowledge of 83% which was included in the good category.

Discussion

This study aims to measure students' knowledge about dental and oral hygiene before and after using flash card media in class IV students at SDN Jajar Tunggal III Surabaya. Based on the results of data collection that has been carried out on 40 students, the discussion can then be structured as follows:

Knowledge about Dental and Oral Hygiene Before Using *Flash Card Media*

Based on the research findings, the dental and oral hygiene knowledge of fourth-grade students at SDN Jajar Tunggal III Surabaya was categorized as low before

the flashcard media was introduced. The students' limited understanding of dental and oral care may be influenced by several contributing factors. Based on the results in the field, many students brush their teeth incorrectly, which causes food residue to not be brushed properly and they lack knowledge about the right time to brush their teeth. This is caused by a lack of education from health workers which has never been carried out. One way that can be done at school is by holding a UKGS program. This UKGS program can be carried out with dental hygiene education by explaining the media *flash cards* with dental and oral hygiene knowledge material.

Lack of knowledge regarding dental and oral hygiene is one of the main factors in the high prevalence of dental caries. Many children do not understand the correct tooth brushing technique, the right time to brush their teeth, and the importance of regular visits to the nearest dental clinic. Another factor that contributes is the high

consumption of sweet foods and sweet drinks which increases the risk of caries (Mufarohah & Munawaroh, 2025).

Dental and oral hygiene problems can occur in adults and children. Elementary school children are particularly susceptible to issues related to dental and oral hygiene due to the condition of their teeth and mouth. Maintaining cleanliness of the teeth and mouth is essential for preventing disease and ensuring good oral health, so it must be cared for properly to achieve optimal health (Ulfa, 2020).

The impact of consuming food or drinks containing carbohydrates can trigger bacteria in the oral cavity to produce acid, thereby causing the pH of saliva to decrease. Bacteria in the mouth is normal. Bacteria can turn all foods, especially sugar, into acid. Food leftover bacteria will form a sticky layer that adheres to the surface of the teeth (Muzakki & Arini, 2025).

Children's lack of habit of maintaining and cleaning their teeth and mouth by brushing their teeth twice a day after breakfast and at night before bed as a preventative measure and can affect knowledge and health. If students' knowledge is still lacking then the risk of dental and oral hygiene is still poor. This is caused by insufficient knowledge about dental and oral health.

This is in accordance with research by Aqidatunisa et al., (2022) knowledge is influenced by education level. This can influence a person's attitudes and actions to apply the information obtained to be implemented in daily life and become habits. Dental and oral health information given to children must use language that is easy to understand and provide examples of how to care for their teeth so that children will like the things they see every day.

In this case, there are many ways that can be done to minimize the lack of knowledge about dental and oral hygiene which can be applied to school-age children, namely the need to provide dental hygiene education to prevent dental health

problems, such as how to brush your teeth properly and correctly and educating when is the right time to brush your teeth using *flash card* media which is more innovative and interesting for children.

Knowledge about Dental and Oral Hygiene After Using Flash Card Media

The research results showed that after the use of flash card media, fourth-grade students at SDN Jajar Tunggal III demonstrated an average level of dental and oral hygiene knowledge categorized as good. The data analysis indicates that students' understanding of dental and oral health improved following the implementation of the flash card media. Media is very influential on knowledge because *flash card* media is interesting for elementary school age children.

According to Islam & Agung (2025). that counseling provided using various media can increase students' dental health knowledge. Based on the description above, it can be concluded that counseling can help increase students' knowledge, especially using media that attracts students' attention. In this research, *flash cards* media was used. This is in line with research (Islam & Agung, 2025). which states that *flash cards* are media that are suitable for elementary school age children because elementary school children still like to play.

Lack of maintaining oral hygiene is very important for good body health. Brushing your teeth every day, namely in the morning after eating and at night before going to bed, is very good during early childhood to form a pattern in the subconscious mind that is carried over into adulthood. Brushing your teeth when taking a shower in the morning and before going to bed at night can train children's instincts from childhood to adulthood (Islam & Agung, 2025).

Health education is something that is important to instill from an early age, one of which is maintaining healthy teeth and mouth. Oral and dental health is generally not optimal for elementary school children

due to errors in brushing their teeth and the inappropriate frequency of brushing their teeth. So this needs to be emphasized to elementary school students, for example education regarding dental and oral hygiene and the appropriate frequency of time for brushing teeth (Kusumastuti et al., 2025).

The *flash card* media has a significant influence on knowledge because this media can also be used as a game medium. Apart from that, flashcard media is in the form of picture cards which are made as attractive as possible, so that children are interested and feel happy because childhood is a time of play, so providing knowledge will be very effective in increasing knowledge (Notoatmodjo, 2018). This research is in line with Kusumastuti et al., (2025) if elementary school-age children still experience numerous dental and oral issues arise from limited knowledge about proper ways to maintain oral hygiene. This study was conducted to enhance the dental and oral health awareness of fourth-grade students at SDN Jajar Tunggal III Surabaya by helping them understand the appropriate times to brush their teeth.

In accordance with the results of Zafer & Ratula (2022) research, flash cards are the right method and can help efforts to increase students' knowledge about dental and oral hygiene. In addition, it can help students by showing pictures and words to the student in each card so that student learning becomes fun.

According to research by Desprians (2025), flash card media serves as a learning tool that offers visual experiences, helping children increase their motivation to learn and making complex concepts easier to understand.

Thus, the conclusion of the results of this study, based on the researcher's initial data, is that poor dental hygiene knowledge is influenced by several factors, one of which is the knowledge factor. This is related to what researchers at SDN Jajar Tunggal III Surabaya did which showed that students' knowledge related to dental

and oral hygiene before using flash card media was included in the poor category and after using flash card media in the good category.

The conclusion of the research results and theories is in line and states that behavior is a response to stimulus. Behavior can arise through reactions by using flash card media that interacts with organisms to overcome solutions in overcoming the problem of learning laziness in the hope of helping students improve their knowledge in maintaining dental and oral hygiene.

CONCLUSIONS

Based on the results of the research and discussion, it can be concluded that this research is the understanding of dental and oral hygiene among fourth-grade students at SDN Jajar Tunggal III Surabaya before counseling in using flash card media with the lack category. The understanding of dental and oral hygiene among fourth-grade students at SDN Jajar Tunggal III Surabaya after counseling in using flash card media with good category.

CONFLICTS OF INTEREST

The authors would declare that there is no conflict of interest from this manuscript.

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