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Use of Puzzle Media on Dental and Oral Cleanliness in Class V Students (Students at Sidoklumpuk Elementary Scholl, Sidoarjo Regency)

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ABSTRACT

Background: Debris is one of the dental and oral hygiene problems that school-aged children often encounter. Children aged 6-14 years are a critical age for dental and oral hygiene problems. The problem of this research is the poor debris index of class V students at SDN Sidoklumpuk Sidoarjo. The aim of this research is to determine the use of puzzle media for dental and oral hygiene in class V students at SDN Sidoklumpuk Sidoarjo. This research method is a Quasy Experiment with a pretest-posttest with control group design, with a sample size of 56 students. Data collection in this study was by observation with pretest and posttest to determine students' oral and dental hygiene. The population in this study were fifth grade students at SDN Sidoklumpuk Sidoarjo. Analysis of research data using the Wilcoxon and Mann-Whitney tests. Results There were differences regarding dental and oral hygiene before and after counseling using puzzle media. The conclusion of this research is that there is an increase in dental and oral hygiene before and after counseling using puzzle media.

Keywords: Dental and Oral Hygiene, Puzzle Media

INTRODUCTION

Children tend to have problems with dental and oral hygiene. Lack of oral and dental hygiene, improper way of brushing teeth, rarely cleaning teeth, the type of food eaten by children which is generally soft, sweet and sticky so that food sometimes sticks in the mouth is one of the factors causing dental and oral hygiene problems. (Anggraeni *et al.*, 2022).

The results of the 2018 Riskesdas show that Indonesian people need to pay attention to keeping their teeth and mouth clean. According to a health survey, 57.6% of the Indonesian population has problems related to unclean teeth and mouth, a figure that is still far from the target desired by WHO, namely only 50% for the 10-14 year age group who understand the importance of maintaining dental and oral hygiene. In East Java, the rate of dental and oral hygiene problems was recorded at 7.1%, with a figure of 5.9% for the 10-14 year age group. Although 94.7% of Indonesians

brush their teeth daily, only 2.8% do it at the right time.

The problems faced by groups of elementary school age children are between the ages of 6-12 years, which is a transition period or a period of mixing between milk teeth (primary teeth) and permanent teeth (secondary teeth). The transition period can be the worst period for a child because dental and oral health problems that lack of attention and care can affect the child's future in terms of dental and oral health. During this period, children also show sensitivity to learn according to their curiosity (Pratiwi *et al.*, 2023)

The study results showed that most of the Sidoklumpuk Elementary School students in Sidoarjo did not know the frequency and how to maintain proper and correct dental and oral hygiene.

RESEARCH METHOD

This research has been approved by the Health Research Ethics Commission of

the Polytechnic of Health Surabaya No. EA/2347/KEPK-Poltekkes_Sby/V/2024

The type of research used in this research is quantitative research using the Quasy Experiment method, This design means that there are two groups of subjects being observed, namely the intervention group and the control group. Measurements were carried out twice in each group, namely before being given treatment and after being given treatment. Research activities are carried out by giving an initial test (pretest) before treatment is carried out, after being given treatment a final test (posttest) is given. The aim of using the effectiveness of this design education is to find out how to use the explosion box media to improve dental and oral hygiene. The target of this research was 56 grade 5 students at SDN Sidoklumpuk Sidoarjo. The sampling technique was carried out using total random sampling technique. The instrument used in this research was an observation sheet. Hypothesis processing uses Wilcoxon analysis. The significance value used in this research (α) = 0.05.

RESULT AND DISCUSSION

Knowledge of maintaining oral health before using puzzle media at SDN Sidoklumpuk Sidoarjo.

Table 1. Frequency distribution of students' dental and oral hygiene scores before being given counseling about dental and oral hygiene using puzzle media for the intervention group.

Category	Frequency	Percentage
Not enough	25	89,2%
Enough	2	7,1%
Good	1	3,5%
Total	28	100%

Table 1 shows that the dental and oral hygiene scores of intervention group respondents before counseling on dental and oral hygiene using puzzle media were mostly included in the poor category (89.2%), moderate category (7.1%), and good category (3.5%). Based on the results

of the research, the average debris index for dental and oral hygiene (DI) in class V students at SDN Sidoklumpuk Sidoarjo before counseling using puzzle media was in the bad category. According to Ekasari *et al.*, (2022) brushing teeth can influence a person's level of dental and oral hygiene by paying attention to the frequency and time of brushing teeth. A good frequency for brushing your teeth is twice a day, while the optimal time to brush your teeth is in the morning after breakfast and at night before bed. Brushing your teeth properly and correctly can reduce the risk of plaque and debris building up on the surface of your teeth. You also need to pay attention to the use of a toothbrush, such as choosing the right bristles, keeping the toothbrush clean on a daily basis and changing the toothbrush every 3 months or when the bristles look blooming to prevent the growth of bacteria on the toothbrush.

According to the research results, it is in accordance with Aqidatunisa *et al.*, (2022) who stated that a person's good and correct tooth brushing behavior is related to dental and oral hygiene. If the student's toothbrushing behavior is correct then the dental and oral hygiene status will be good, but if the student's toothbrushing behavior is still incorrect then the dental and oral hygiene status will be poor.

Knowledge of maintaining oral health after using puzzle media among students in class 5 at SDN Sidoklumpuk Sidoarjo.

Table 2. Frequency distribution of students' dental and oral hygiene scores after being given counseling about dental and oral hygiene using puzzle media for the intervention group.

Category	Frequency	Percentage
Not enough	0	0,0%
Enough	4	14,2%
Good	24	85,7%
Total	28	100%

Table 2 Show after being given counseling about dental and oral hygiene using puzzle media, respondents experienced an increase

so that the knowledge category became (14.2%), and the good category (85%). According to Puspita et al., (2022) Dental health education for elementary school children aged 6-12 years is very important because this is a critical period, both for the growth of their teeth and also for their mental development, it requires an approach to produce knowledge, attitudes and healthy behavior, especially health. tooth. Success in providing dental health education to school children cannot be separated from educational methods and the important role of media because it can support the learning process and can also help make it easier for students to understand the learning material. Through media, the messages conveyed can be more interesting and easier to understand.

Table 3. Frequency distribution of dental and oral hygiene scores for control group students before not being given media.

Category	Frequency	Percentage
Not enough	24	85,7%
Enough	2	7,1%
Good	2	7,1%
Total	28	100%

Table 3 shows that the dental and oral hygiene scores of control group respondents were mostly in the poor category (85.7%), and the moderate category (7.1%). The results of this research are also supported by research by Personal et al., (2024) regarding the development of the Gimul Puzzle as a media for educating personal hygiene knowledge in children's oral teeth cases. These results show that there is a real difference between the influence of developing gimul puzzles as an educational medium for children's personal dental and oral hygiene knowledge and the control group.

Table 4. Frequency distribution of dental and oral hygiene scores for control group students after not being given media.

Category	Frequency	Percentage
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Not enough	25	89,2%
Enough	1	3,5%
Good	2	7,1%
Total	28	100%

After the examination of respondents there was no improvement because they were not given counseling so that the poor dental and oral hygiene category became (89.2%) the moderate category (3.5%), and the good category (7.1%). The results of this research are in accordance with research by Mallombassang et al., (2023) regarding the educational puzzle media innovation for elementary school children on dental and oral health in disadvantaged areas. The results of the research showed that the average score for describing children's knowledge about maintaining dental and oral health using the lecture method and puzzle media was obtained on average using the lecture method at 3.2 and for puzzle media at 3.9. This means that students understand better using puzzle media about how to maintain healthy teeth and mouth compared to using the lecture method. In this way, puzzle media is more effective in increasing students' knowledge. Puzzle is a game consisting of pieces of a certain image that can train your concentration level. The benefit of using puzzle media is that children sharpen their brains by searching, finding, strategizing, matching shapes, practicing patience and completing puzzle pieces independently and correctly.

Maintaining dental and oral hygiene before and after intervention group using puzzle media for grade 5 students at SDN Sidoklumpuk Sidoarjo

Table 5. Wilcoxon Test Results Before and After Using Puzzle Media in Class 5 Students at SDN Sidoklumpuk Sidoarjo in 2024.

Level of knowledge	Σ	Average	P	Results
Before	28		0,000	H0
After	28	7.017		rejected
Before and after counseling using				

puzzle media about dental and oral hygiene, the Wilcoxon test results were obtained at $(0.000) < \alpha (0.05)$, meaning that H1 was accepted and H0 was rejected, namely there were differences before and after counseling using puzzle media about dental hygiene and mouth in 5th grade students at Sidoklumpuk Elementary School. (Nisem, 2020) states that the educational side of puzzle-type toys functions to train concentration, accuracy and patience, strengthen memory, introduce children to relationship systems and concepts, by choosing images/shapes, they can train children to think mathematically (using their left brain). Therefore, it can be concluded that this media can influence students in maintaining oral hygiene, because attractive media is easier to understand in learning or counseling activities so that it can change the way students maintain dental and oral hygiene.

Maintaining dental and oral hygiene before and after control group using puzzle media for grade 5 students at SDN Sidoklumpuk Sidoarjo

Table 6. Wilcoxon Test Results Before and After Using Puzzle Media in Class 5 Students at SDN Sidoklumpuk Sidoarjo in 2024.

Level of knowledge	Σ	Average	P	Results
Before	28		0,317	H1
After	28	1.000		rejected

Table 6 shows the Debris Index (DI) of the groups before and after the examination regarding dental and oral hygiene. The Wilcoxon test results were obtained at $(0.317) < \alpha (0.05)$, meaning that H1 was rejected and H0 was accepted, namely there was no difference before and after examination of dental and oral hygiene in grade 5 students at Sidoklumpuk Elementary School.

Research Test Results

Table 7. Results of research tests on the post-test scores of the intervention group

and control group at SDN Sidoklumpuk Sidoarjo.

Level of knowledge	Σ	Average	P	Results
Before	28		0,000	H0
After	28	7.017		rejected

Based on table 7, the Mann-Whitney test was carried out on the post-test results between the intervention group and the control group. The results show that $(0.000) < \alpha (0.005)$, so the hypothesis H0 is rejected and the alternative hypothesis H1 is accepted. This indicates that the use of Puzzle media is effective in maintaining oral hygiene in the intervention group compared to the control group who did not receive treatment. The conclusion of this theory is that by choosing the right stimulus, children will be enthusiastic and eager to listen so that students can increase their knowledge which in turn can change their behavior in a positive direction regarding dental and oral hygiene. Health education cannot be separated from the media because education media are all means or efforts to display information messages that the instructor wants to convey so that students can increase their knowledge which can ultimately change their behavior in a positive direction towards dental and oral hygiene. Meanwhile, here the average index changes from bad to good so that the theory and results improve.

CONCLUSION AND RECOMMENDATION

Based on the results of research regarding knowledge of dental and oral health maintenance among students in classes 5A and 5D at SDN Sidoklumpuk Sidoarjo in 2024, it can be concluded that:

1. Average Debris Index for dental and oral hygiene before counseling using puzzle media was in the poor category
2. Average Debris Index for dental and oral hygiene after counseling using puzzle media is in the good category
3. Data analysis shows that there is an

influence of counseling using media puzzle towards reducing debris in the dental and oral hygiene index.

Based on the results and counseling of research conducted on the use of puzzle media for dental and oral hygiene in 2024, the following suggestions can be given:

1. For Teachers at SDN Sidoklumpuk Sidoarjo
In order to further motivate Class V students at SDN Sidoklumpuk Sidoarjo in maintaining clean teeth and mouths by improving students' skills in keeping their teeth and mouths clean, such as at least once a week holding a toothbrush together.
2. For further researchers
The results of this research can be used as reference material and as motivation for anyone who will conduct similar research, so that it becomes a benchmark for future researchers.

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