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THE EFFECT OF PUZZLE MEDIA ON DENTAL AND ORAL HEALTH KNOWLEDGE IN GRADE II STUDENTS AT SDN 2 LAMCOT ACEH BESAR REGENCY

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ABSTRACT

Dental and oral health knowledge in school students needs to get special attention to dental and oral health because at this age students are undergoing a process of growth and development, so it is necessary to carry out dental and oral health education about puzzle media in pupil. The purpose of this study is to determine the Effect of Puzzle Media on Dental and Oral Health Knowledge in Grade II Students at SDN 2 Lamcot Aceh Besar Regency. The type of research used is a *Quasi Experiment* with a *Pretest-Posttest Nonequivalent Control Group Design*, this design is measured by the presence of two groups, namely the intervention group and the control group. The population in this study is all students of SDN 2 Lamcot totaling 44 students with the *Total Sampling* Technique, which is divided into two groups, namely the intervention group and the control group using the *Paired Sample T-Test* statistical test. The *Paired Sample T-Test* in the intervention group had a *p value* of 0.001 while the *control group* had a *p value* of 0.008 where both groups experienced an increase in *pre-test* and *post-test*. There is an influence of puzzle media in improving dental and oral health knowledge in students of SDN 2 Lamcot, Aceh Besar Regency. It is recommended to students of SDN 2 Lamcot Aceh Besar Regency, especially grade II, to be able to understand dental and oral health and it is recommended to schools and health institutions to use puzzle media in providing education to improve students' knowledge of Dental and Oral Health.

Keywords: *Puzzle, Dental and Oral Health Knowledge*

INTRODUCTION

Health is a state of well-being of the body, soul, and society that allows everyone to live productively socially and economically. Development in the health sector aims to improve the degree of public health so that the level of health becomes better. The implementation of development in the health sector is inseparable from the broader framework, namely development in the

health sector in general. General health encompasses a wide variety of aspects including dental and oral health.¹

Dental and oral health is important in the life of every individual, including children, because teeth and gums that are damaged and never treated will cause pain, chewing disorders in the oral cavity, and can interfere with the health of other bodies. According to the *World Health Organization* (WHO), dental and oral health is an integral component of the overall health of the body that cannot be separated from each other, because it has an impact on the overall body function. Dental and oral health disorders will affect the overall health of the body so that it has an impact on the quality of life and knowledge of a person's dental health to the maximum, because teeth have the functions of speech, chewing and appearance.²

The results of Regional Health Research (RISKESDAS) by the Ministry of Health of the Republic of Indonesia show that the increase in children who experience dental and oral health problems based on age characteristics is 28.9% for 5-9 years, and 25.2% for 10-14 years old (Research and Development Agency of the Ministry of Health of the Republic of Indonesia). This shows that the prevalence of dental and oral health problems has increased within 5 years. Based on Aceh Riskesdas Data in 2018, as well as the global and national proportions in Aceh Province, more than half of the population, namely 55.34%, also experience dental and oral health problems. (Ministry of Health of the Republic of Indonesia, 2019). Based on data from the Darul Imarah Health Center in 2021, the number of caries cases in the age group of 6-14 years was recorded at 5%, the number of gum and periodontal tissue diseases was 0.8%. Meanwhile, those who scale or clean tartar are not in the age group of 6-14 years.³

Dental and oral health knowledge is one of the efforts to prevent and overcome dental health problems through a dental and oral health education approach. Dental and oral health is a condition where the teeth in the oral cavity are clean, free from plaque, other dirt on the surface of the teeth such as tartar, and food residues and do not smell bad in the mouth. Therefore, it is important to maintain dental and oral health to prevent other dental and oral diseases.⁴

Puzzle media is one of the educational media that is good for delivering material related to dental and oral health knowledge. Puzzle media is a learning medium in the form of pieces of pictures that are arranged until they are formed into a complete picture. The selection of puzzle media is not only interesting, it can focus students' attention, the benefit of puzzle media is that

it can train reasoning and explore students' creativity in reading at the beginning stage. Students will find it easier to get their ideas out through puzzle media with the learning method while playing.⁵

The researcher chose puzzle media as research material because puzzle media can attract students in learning while playing according to the pictures listed in the puzzle, so that students can easily understand the material that has been presented. This puzzle media is also quite easy to apply, and is suitable for learning in today's era. The use of puzzle media is a new innovation because in the use of image media it is presented in the form of puzzles. Puzzle game media is an image media that falls into the type of visual media because it can be digested through the sense of sight.⁶

Play is an activity or activity that is carried out with or without tools that provide information, provide fun and develop imagination in children. One of them is a puzzle game. Puzzle is a game that involves visuals, namely by combining separate pieces of pictures into a single unit that has meaning and can be used in a fun learning process using puzzle games. Puzzle games about dental health can be used as an alternative educational media about dental and oral health knowledge through an interesting, interactive, and can add to the child's curiosity, competitiveness and social spirit.⁷

METHODS

The type of research conducted in this study is *Quasi Experiment* research. This research will be divided into two groups, namely the intervention group and the control group. The intervention group in this study will be given intervention with puzzle media while in the control group with poster media. This study uses a design with a *Pretest-Posttest Nonequivalent Control Group Design*. The research was conducted at SDN 2 Lamcot, Aceh Besar Regency on April 16-23, 2024. The sample of this study amounted to 44 students who were divided into two groups. Data collection was obtained using pre-test and post-test questionnaires. The data obtained was processed using the Paired Sample T-Test.

RESULTS AND DISCUSSION

A study on the influence of puzzle media on dental and oral health knowledge in grade II students at SDN 2 Lamcot, Aceh Besar Regency. The results of the research obtained the following data:

Based on research conducted on respondents, data on the frequency of responding to en was obtained:

Table 4.1 Distribution of Respondent Frequency by Age

It	Age	Frequency	Persentase (%)
Intervention			
1	8 Years	20	90,9 %
2	9 Years	2	9,1 %
Total		22	100%
Control			
1	8 Years	19	86,4 %
2	9 Years	3	13,6 %
Total		22	100%

Based on Table.1, it was shown that the characteristics of respondents based on age in the majority of the intervention group were 8 years old as many as 20 respondents (90.9% and at least 9 years old as many as 2 respondents (9.1% In the control group, the majority were 8 years old, as many as 19 respondents (86.4%) and at least 9 years old, as many as 3 respondents (13.6%).

Table 2. Frequency Distribution of Respondents by Gender

It	Gender	Frequency	Persentase (%)
Intervention			
1	Man	9	40,9 %
2	Woman	13	59,1 %
Total		22	100%
Control			
1	Man	9	40,9 %
2	Woman	13	59,1 %
Total		22	100%

Based on Table.2, it was shown that the characteristics of respondents based on gender in the intervention and control groups were mostly female as many as 13 respondents (59.1%) and at least 9 respondents (40.9%).

Table 3.
Frequency Distribution Based on Dental and Oral Health Knowledge
Before and After in the Intervention Group Using
Puzzle Media

It	Knowledge	Intervention Groups			
		Before		After	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Good	1	4,5 %	21	95,5 %
2	Enough	2	9,1 %	1	4,5%
3	Less	19	86,4 %	0	0 %
Total		22	100%	22	100%

Based on Table.3, it shows that the distribution of respondents based on dental and oral health knowledge before the intervention is mostly in the category of less than 19 respondents (86.4%). In the knowledge of dental and oral health after the intervention, the majority were in the good category as many as 21 respondents (95.5%).

The results of the frequency distribution of the level of dental and oral health knowledge in the Media Puzzle Group showed an increase in respondents' knowledge, which can be seen from the comparison before being given a larger intervention with less criteria as many as 19 respondents (86.4%) to the good category as many as 21 respondents with a percentage of 95.5%. The increase in dental and oral health knowledge with puzzle media can be seen from all respondents who had less knowledge before being given an intervention using puzzle media to be good after being given an intervention using puzzle media.

In accordance with the opinion of Cit Hutami, et al. (2019), the use of puzzle media can provide a comfortable learning atmosphere through games to solve problems related to subject matter and can improve students' knowledge for the better. This is because playing with puzzle media has the advantage of being an interesting medium so that it can create a classroom atmosphere that is not monotonous and boring, and is able to make teaching and learning activities in the classroom fun and can train students' ability to understand dental and oral health.

Table 4.
Frequency Distribution Based on Dental and Oral Health Knowledge Before and After in the Control Group Using Poster Media

It	Knowledge	Control Group			
		Before		After	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Good	0	0%	1	4,5 %
2	Enough	3	13.6 %	3	13,6 %
3	Less	19	86,4 %	18	81,9 %
Total		22	100%	29	100%

Based on Table 4.4 showed that the distribution of respondents based on dental and oral health knowledge before the intervention was mostly in the category of less than 19). respondents (86.4% Meanwhile, the knowledge of students after the intervention through poster media on the good criteria has increased, namely 1 student with a good category (4.5%), and 3 students with a fair category of 13.6%, then for the lack of knowledge criterion has decreased, namely 18 students with a bad category of 81.9%.

The control group used the majority of the respondents' knowledge before being given the intervention with the criteria of less than 19 respondents 86.4%. The increase in knowledge is in the good category only in 1 respondent with a percentage of 4.5%.. This means that the increase in dental and oral health knowledge in respondents after being given an intervention using poster media is very insignificant, therefore not all respondents who have less knowledge before being given an intervention using poster media are good After being given an intervention using poster media.

Lack of dental and oral health knowledge in respondents before being given the intervention using poster media. After being given an intervention using poster media in the respondents, the increase in dental and oral health knowledge was only 4.5% because the respondents did not understand the explanation of dental and oral health through poster media. According to researchers, providing education using poster media is too monotonous so that it is less attractive for students to understand the material presented and students will get bored more quickly with the material presented. However, the use of puzzle media as a means of increasing dental and oral health knowledge was very effective and significant with a difference of 39.82%

compared to poster media of 13.18%. This shows that puzzle media is very interesting to be used as an educational medium to increase dental and oral health knowledge in respondents.

Table 5.
Results of the Paired Sample T-Test of Dental Health Knowledge in Oral Health Before and After Using Puzzle Media in the Intervention Group

Extension	Mean	N	Df	P Value
Media Puzzle (Before)	42,27	22	21	0.001
Media Puzzle (After)	82,09	22		

The results of the study as presented in table 4.5 are known that the students' knowledge after the test using puzzle media is better with an average of 82.09 than before using puzzle media, which is with an average of 42.27 with a difference of 39.82 points. This shows an increase in the knowledge of grade II students at SDN 2 Lamcot Aceh Besar Regency about dental and oral health knowledge.

The results of the test showed that there was an increase in knowledge in the average value of knowledge before being given puzzle media and the average value of knowledge after being given puzzle media, there was a significant difference, reviewed based on the results of the Paired Sample T-Test $p=0.001$ ($p<0.05$) at a confidence level of 95%. The results of the above study show that there is an influence of puzzle media on dental and oral health knowledge. So the Researcher's Assumption states that to improve dental and oral health knowledge in students, Puzzle Media is needed so that it can be used as a learning medium to improve dental and oral health knowledge in grade II students at SDN 2 Lamcot Aceh Besar Regency.

The results of this study are supported by research conducted by Widya Sekar Pradytha (2023), it is known that the average pre-test and post test scores of children's knowledge level by being given puzzle media are 10.16% and the average post test is 16.93 with a difference of 6.77%.

CONCLUSION

Based on the results of the research and discussion above regarding the results before and after being given puzzle media in improving dental and oral health knowledge in grade II students at SDN 2 Lamcot Aceh Besar Regency, it can be concluded as follows: The results of the research in the group of

respondents before the use of puzzle media on dental and oral health knowledge found that the respondents in the less than 19 students (86.4%), The fair category amounted to 2 students (9.1%), and the good category amounted to 1 student (4.5%).

The results of the research on the group of respondents after the use of puzzle media on dental and oral health knowledge found that the respondents in the good category amounted to 21 students (86.4%), the sufficient category amounted to 1 student (4.5%), and there were no students in the poor category.

The results of the puzzle media research on the knowledge of dental and oral health in students after being given puzzle media were higher than the value of knowledge before being given puzzle media. So there is an influence of puzzle media on dental and oral health knowledge. This is evidenced by a p value of less than 0.05 ($p < 0.05$) which is 0.001.

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