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EDUCATIONAL MEDIA JIGSAW PUZZLE GAMES AS AN EFFORT TO INCREASE DENTAL AND ORAL HEALTH KNOWLEDGE FOR GRADE I STUDENTS MI MIFTAHUL FALAH SINANGGUL IN THE WORKING AREA OF THE MLONGGO HEALTH CENTER, JEPARA REGENCY

Anugrah Nurul Ramadani Rabbi¹; Anita Pujiarti²; Amalia Putri Fadilla³; Sri Nurul Amaliah⁴; Tri Suprapti⁵; Aji Saipul Rakhman⁶; Sukini⁷; Lanny Sunarjo⁸.

¹Postgraduate Program Poltekkes Kemenkes Semarang, Indonesia

²Postgraduate Program Poltekkes Kemenkes Semarang, Indonesia

³Postgraduate Program Poltekkes Kemenkes Semarang, Indonesia

⁴Postgraduate Program Poltekkes Kemenkes Semarang, Indonesia

⁵Postgraduate Program Poltekkes Kemenkes Semarang, Indonesia

⁶Postgraduate Program Poltekkes Kemenkes Semarang, Indonesia

⁷Postgraduate Program Poltekkes Kemenkes Semarang, Indonesia

⁸Postgraduate Program Poltekkes Kemenkes Semarang, Indonesia

Corresponding author: Anugrah Nurul Ramadani Rabbi

Email: anugrah.nurulramadhani@gmail.com

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ABSTRACT

Elementary school age children are classified as a group that is prone to dental and oral diseases, this is because in elementary school age children behavior in caring for dental and oral health is still lacking. The results of Basic Health Research (Riskesdas) in 2018 showed that 54.0% of dental and oral health problems were 5-9 years old in school. The dental and oral health of school-age children needs serious attention from health workers, both from dentists and dental and oral therapists. The most common disease suffered by elementary school-age children is caries. The main cause of caries is due to the continuous accumulation of plaque that is not cleaned. Dental health education needs to be instilled from an early age in children so that they know the right way to maintain the health and hygiene of their teeth and mouth. Efforts to prevent the occurrence of dental and oral diseases in elementary school children are by conducting a dental and oral health education program for students. The goal is to increase students' knowledge in maintaining and maintaining dental health. The methods used in this service are the method of playing, lecturing, and demonstrating to the respondents. Based on the results of the activities that have been carried out in the service, the respondents gave a positive response and there was an increase in knowledge and dental and oral hygiene.

Keywords: jigsaw puzzle; education; knowledge; dental health

Introduction

Dental and oral health is recognized as an important unmet health need of a population¹. Healthy teeth and mouth are closely related to a healthy body². If dental and oral health is not taken care of, it will cause various kinds of diseases and other disorders³. Based on *The Global Burden of Disease Study 2017*, dental and oral health problems, especially dental caries, are almost experienced by half of the world's population, namely 3.58 billion people and more than 530 million children suffer from firstborn dental caries⁴.

Elementary school age children are classified as a group prone to dental and oral diseases⁵. The results of the Basic Health Research (Riskesdas) in 2018 showed that the percentage of Indonesian people with dental and oral problems at school age 5-9 years increased from 28.9% to 54.0%. The most common disease suffered by school-age children is caries⁶. Dental and oral health of school-age children needs serious attention from health workers, both from dentists and dental and oral therapists⁷.

The main cause of caries is due to the accumulation of plaque that is constantly not cleaned⁸. Poor dental and oral hygiene can cause debris and calculus that contribute to dental and oral diseases⁹. Debris comes from carbohydrates that stick to the surface of the teeth, this type of food when tucked or attached to the surface of the teeth will be converted into acid by bacteria¹⁰. Uncleaned debris can contribute to the formation of plaque which is then metabolized by *streptococcus mutans* to produce acid, resulting in demineralization of tooth structures over time¹¹.

Good dental and oral hygiene is one of the factors that free it from caries, this can be realized through good and correct knowledge and behavior in maintaining dental and oral health¹². However, it is known that elementary school age children in Indonesia have a low level of knowledge about dental health¹³. The alignment of teeth and mouth in children is influenced by a

person's knowledge, the higher the knowledge, the better the cleanliness of the teeth and mouth¹⁴.

Providing dental and oral health promotion to children is an effort to influence the community, including elementary school age children, both individuals and groups, to behave in a healthy life in maintaining dental and oral health, one of the ways is by conducting counseling¹⁵. Dental and oral health counseling for elementary school age children is very important to provide because at that age children are experiencing a period of development, both cognitive and the development of their dental and oral conditions, so it requires an approach to produce knowledge, attitudes and behaviors in maintaining dental and oral health, including maintaining dental and oral hygiene by using educational media¹⁶.

Based on this above background, the implementation of this service is focused on providing educational media *Jigsaw Puzzle Games*. This workshop activity aims to increase dental and oral health knowledge of grade I students of MI Miftahul Falah Sinanggul in the work area of the Mlonggo Health Center, Jepara Regency.

Methods

The methods used in this community service include interviews, observations, and lectures, as well as games. The interview was conducted with the aim of obtaining information related to the problems experienced by MI Miftahul Falah Sinanggul students. The results obtained were based on interviews related to knowledge, problems, and the implementation of dental and oral health checks in elementary school students. The observation carried out was an examination of the condition of the oral cavity of the grade I student of MI Miftahul Falah Sinanggul. The lecture was conducted around material about dental and oral health in the form of good and bad foods for dental health, how to maintain dental health, and good and correct brushing procedures. Meanwhile, the game was

carried out to improve the knowledge of dental and oral health of elementary school students.

Results and Discussion

Community service in Mlonggo District, especially for MI Miftahul Falah Sinanggul elementary school students, aims to increase students' knowledge about dental and oral health. This service activity will be held on September 23-27, 2024. This community service activity was carried out for MI Miftahul Falah grade 1 students. The following is a series of activities carried out by the community service team in Mlonggo District, Jepara:

1. Instructions To Teachers on How to Play Jigsaw Puzzle Games

The service activity began by providing directions to teachers regarding the dental health promotion system that will be carried out to students.



Figure 1. Instructions To Teachers on How to Play Jigsaw Puzzle Games

Providing implementation directions aims to enable grade I teachers to understand and contribute to the implementation and be able to continue this health promotion continuously.

2. Group Division

After giving directions to the firstgrade teacher, this activity continued by dividing the group into several groups of students to play jigsaw puzzle games. Each group consists of 2 people to compile a puzzle.



Figure 2. Group Division

3. Instructions on how to play Jigsaw Puzzle Games

The activity continued by giving instructions to students on how to play Jigsaw Puzzle Games. There are four themes of this puzzle, namely good and bad foods for dental health, how to maintain dental health, and how to brush teeth. Each group can only construct one games jigsaw puzzle theme.



Figure 3. Instructions on how to play Jigsaw Puzzle Games

4. Play Jigsaw Puzzle Games

After being given instructions on how to play Jigsaw Puzzle Games. Students begin to compile puzzles accompanied by students.



Figure 4. Play Jigsaw Puzzle Games Together

5. Promotion of Dental and Oral Health

Promotion is done after the jigsaw puzzle game is finished. The promotional materials provided are in accordance with the four picture themes in the jigsaw puzzle game,

including foods that are good and bad for dental health, how to maintain dental health, and how to brush your teeth. Promotion is done to each group of students with the aim of making it easier for students to understand the material and actively ask questions.



Figure 5. Promotion of Dental and Oral Health

6. Dental Hygiene Check

After the counseling was completed, it was continued with simple examination activities related to dental and oral hygiene for students, namely the debris index score.



Figure 6. Dental Hygiene Check

The evaluation was carried out by analyzing the results of the pre-test and post-test of knowledge and dental and oral hygiene of grade I students of MI Miftahul Falah Sinanggul. Based on the data, analyses were carried out related to changes before and after the intervention. The results obtained are as follows:

1. Knowledge of dental health of Stundets

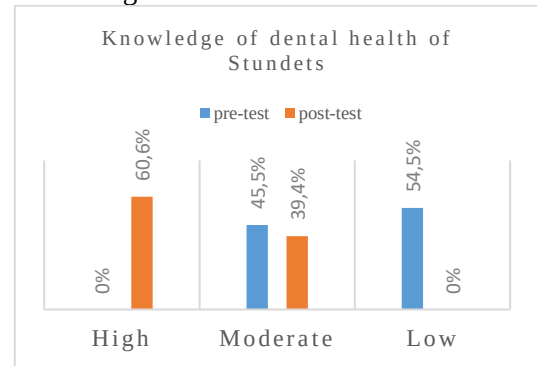


Figure 7. Bar Chart of Students' Knowledge Score on Dental Health

2. Student Dental Hygiene Score (Debris Index Score)

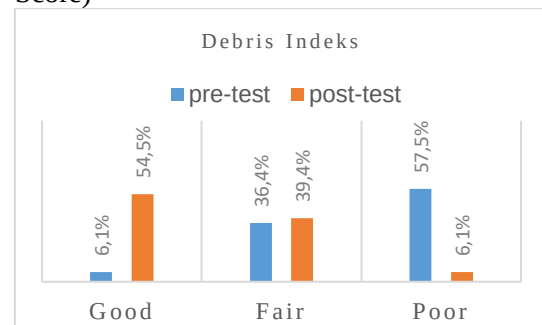


Figure 8. Bar Graph of Students' Dental Hygiene Score

Analysis of changes in knowledge of dental health and dental hygiene in grade I students of MI Miftahul Falah Sinanggul was carried out by comparing the results of the pre-test and post-test that had been given to students. Changes can be seen from the results of the bar chart which shows an increase in students' knowledge of dental health and dental hygiene. The initial level of knowledge in students increased where at the beginning of the pre-test the low level of knowledge was 54.5%, the moderate level of knowledge was 45.5% and the high level of knowledge was 0%, after being given the intervention the low level of knowledge was 0%, the moderate level of knowledge was 39.4% and the high level of knowledge was 60.6%. The students' dental and oral hygiene based on pretest data obtained a poor dental hygiene level of 57.5%, a sufficient dental hygiene level of 36.4% and a good dental hygiene level of 6.1%. After the intervention was given, there was an increase

in students' dental and oral hygiene. The posttest data obtained were a poor dental hygiene level of 6.1%, a sufficient dental hygiene level of 39.4% and a good dental hygiene level of 54.5%.

Pre-test and post-test results showed an increase in knowledge and dental hygiene in grade I MI Miftahul Falah Sinanggul. The "Games Jigsaw Puzzle" media is an innovation in providing dental health education for elementary school students. The existence of dental and oral hygiene education and examination is expected to increase knowledge and dental hygiene and minimize dental and oral diseases in elementary school children, especially dental caries.

Dental and oral hygiene checks can be carried out for elementary school students using Disclosing solution or dragon fruit to calculate the student's debris index score. Dental and oral hygiene checks are preventive measures that can help students find out the level of dental hygiene.

References

1. Singh N, Ramakrishnan T. S, Khera A, Singh G. Impact Evaluation of Two Methods of Dental Health Education Among Children of A Primary School In Rural India. *Medical Journal of Dr. DY Patil University*. 2016;9(1): 66-71.
2. Usman F, Aulyah D. R, Sundu S, Sartika D, Jauharuddin A, Soemena R, Aminuddin A. M. A. Upaya Peningkatan Pengetahuan Pengetahuan Orang Tua Tentang Pentingnya Merawat Kesehatan Gigi Dan Mulut Anak Sejak Usia Dini. *Jurnal Pengabdian Masyarakat Gerakan Aksi Sehat (GESIT)*. 2024; 4(1):137-141.
3. Theresia N, Rahmawaty F, Sylvia E. I, Yusup A. Kesehatan Gigi Sangat Penting untuk Anak Usia sekolah. *Jurnal Forum Kesehatan: Media Publikasi Kesehatan Ilmiah*. 2021;11(1): 31-37.
4. World Health Organization. 2018. *World health statistics 2018: Monitoring health for the SDGs, sustainable development goals*. World Health Organization. *Oral Health*. World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/oral-health>.
5. Manbait M. R, Fankari F, Manu A. A, Krisyudhanti E. Peran Orang Tua dalam Pemeliharaan Kesehatan Gigi dan Mulut. *Dental Therapist Journal*. 2019;1(2):74–79.
6. Kementerian Kesehatan. *Laporan Hasil Riset Kesehatan Dasar Indonesia Tahun 2018*. Jakarta: Lembaga Penerbit Badan Penelitian dan Pengembangan Kesehatan (LPB). 101-103.
7. Supriyana S, Rasipin R, Suryo G. A. Management Model of School's Dental Health Effort (UKGS) of Information System-Based in Improving the Quality of Dental Health Management at Elementary School. *Journal of Applied Health Management and Technology*. 2020;2(4): 115-121.
8. Huriati H. 2022. *Pengaruh Penggunaan Media E-Booklet Terhadap Pengetahuan Dan Minat Pasien Dalam Melakukan Penumpatan Gigi* (Doctoral dissertation, Poltekkes Kemenkes Yogyakarta).
9. Mukhbitin, F. Gambaran Kejadian Karies Gigi Pada Siswa Kelas 3 MI Al-Mutmainnah. *Jurnal Promkes*. 2018;6(2): 155-166.
10. Anita, Sulastri S, Ta'adi. Gambaran Pengetahuan Menyikat Gigi Dan Skor Debris Pada Siswa Kelas VII Smp Muhammadiyah 1 Kalibawang Kulon Progo. *Jurnal Poltekkes Kemenkes Yogyakarta*. 2017;1(1): 1-9.
11. Rathee M, Sapra A. 2023. *Dental Karies*. Amerika: StatPearls Publishing.
12. Marlindayanti. 2020. *Plak Gigi*. Kediri: Chakra Brahmanda Lentera.
13. Haryani W, Masyarani L.A, Donsu Jenita D.T. Promosi Kesehatan Gigi Meningkatkan Status Kebersihan Gigi Mahasiswa. *Jurnal Teknologi Kesehatan*. 2015; 1(1): 1-9.
14. Yuniarly E, Amalia R, Haryani W. Hubungan tingkat pengetahuan tentang kesehatan gigi dan mulut dengan tingkat kebersihan gigi dan mulut anak sekolah dasar. *Journal of Oral Health Care*. 2019;7(1): 1-8.
15. Husna L, Prasko. Efektivitas Penyuluhan Kesehatan Gigi Dengan Media Busy Book Terhadap Tingkat Pengetahuan Kesehatan Gigi dan Mulut. *Jurnal Kesehatan Gigi*. 2019; 6(1): 51-55.

16. Tafonao T. Peranan Media edukasi Dalam Meningkatkan Minat Belajar Mahasiswa. *Jurnal Komunikasi Pendidikan*. 2018; 2(2): 103-114.