



Proceeding Paper

THE EFFECTIVENESS OF EDUCATIONAL GAME METHODS USING SPINTA AND FLASHCARD MEDIA AGAINST HANDWASHING BEHAVIOR ON CHILDREN IN SDN 07 AND 04 CENTRAL BENGKULU

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Abstract

The proportion of correct hand washing behavior in children aged 10-12 years in Indonesia was on average of only 49.8% in Bengkulu Province showing a low proportion of hand washing behavior with soap correctly with a percentage of 40%, while in Bengkulu Tengah Regency it shows a low proportion of washing hands with soap. hands use soap properly with a percentage of 45%. The low level of proper hand washing behavior with soap is a big problem in Indonesia. This study aims to determine the effectiveness of the game method education using spinta and flashcard media on hand washing behavior in children at SDN 07 and 04 Bengkulu Tengah. This research is a quantitative research with a quasi-experimental method . The design used in this study was a two group pretest-posttest. The analysis in this study was carried out through the Kolmogorof Smirnof test and the Wilcoxon followed by the Mann Whitney. The results of the analysis of the mean after the intervention showed that the mean knowledge, attitudes and actions of the spinta media group was greater than the flashcard group, namely the knowledge of the intervention group 7.59 control group 5.41 attitude intervention group 34.35 control group 29.86 intervention group 4.97 control group 3.84. The results of this study indicate that spinta media is more effective than the flashcard group with knowledge and attitudes p value = 0.000 actions p value = 0.014. It was hoped that teachers will increase their active role in explaining hand washed behavior to students so that they can improve and practice hand washing. In addition, schools can support the implementation of good and correct hand washing.

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INTRODUCTION

World Health Organization (WHO) States Corona Virus is a virus that infects the respiratory system. This virus can be transmitted zoonotically or between animals and humans (Hanoatubun, 2020). SARS-CoV-2 infection in humans causes symptoms of acute respiratory disorders such as fever, cough, and shortness of breath. In severe cases this disease causes acute respiratory syndrome, kidney failure to death. Symptoms in this virus will appear after 2-14 days of exposure to the virus (Moudy & Syakurah, 2020).

According to the World Health Organization (WHO), statistically as of September 24, 2021, Covid-19 cases in the world confirmed 230,418,451 positive cases and 4.724,876 deaths, while the confirmed data in Indonesia dated September 26, 2021, based on published data, namely 4,208,013 cases tested positive, 4,023,777 people recovered and 141,467 people died (Kemenkes RI, 2021). Confirmed cases of covid-19 in Bengkulu Province dated September 13, 2021 recorded 31.66% of cases. Of that number as many as 95.48% recovered and 1.72% of people died (Bengkulu Provincial Health Office, 2021). Meanwhile, the confirmed data in Central Bengkulu Regency dated September 13, 2021 recorded 0.78% of cases. Of that number as many as 95.72% recovered and 3.61% of people died (Central Bengkulu Health Office, 2021). In Central Bengkulu district, the highest cases are in Pondok Kelapa sub-district, which is 254 cases or 27.8%. Then, the second highest case in Karang Tinggi sub-district was 172 cases or 18.8%, the third case in Talang Empat sub-district was 124 cases or 13.5%. In Pondok Kelapa sub-district, there are 3 puskesmas with the highest number of Covid-19 cases, namely the Pekik Nyaring puskesmas as many as 160 cases or 62.9%, Sidodadi puskesmas 19 cases or 7.4%, and Srikuncoro puskesmas 11 cases or 4.3%. From the comparison of 3 puskesmas with the highest number of Covid-19 as the data above, the researcher chose the Pekik Nyaring Puskesmas because of the highest number of Covid-19 incidents (Dinkes Bengkulu Tengah, 2020).

The Ministry of Health of the Republic of Indonesia (2020) stated, breaking the chain of transmission of Covid-19 can be through isolation, early detection and basic protection, namely protecting yourself and others by washing hands as often as possible with soap and running water or using a handsanitizer (Purnamasari & Raharyani, 2020). The transmission of the covid-19 virus by hand is very fast because it cannot be avoided from objects contaminated with the virus. In the era of the Covid-19 pandemic, the government has campaigned for the importance of washing hands with soap as one of the health protocols that everyone must do wherever they are (Nicety et al., 2020). Report (Riskasda, 2018). Showing the proportion of hand washing behavior correctly in the population aged ≥ 10 years in Indonesia on average is only 49.8% and in Bengkulu Province showing a low proportion in hand washing behavior using soap properly with a percentage of 40%.

In Central Bengkulu Regency shows the proportion of washing hands with soap correctly with a percentage of 45%. This shows that the correct low behavior of hand washing with soap is a big problem in Indonesia, including in the province of Bengkulu.

There are various ways that can be done to provide health promotion to increase children's knowledge about hand washing with soap (CTPS). One of them is by using media because through the media the message conveyed will be interesting and easy for children to understand, one of the interesting media can be through games (games). Play is an excellent medium for forming dexterity, skills and personality formation of children (Rosidah. L, 2014). From the results of testing using games, it was obtained that there was an increase in the understanding of respondents before and after being given an educational game. One of the media that can be used is flash cards and spinta (spin questions) based on research conducted (Kartikasari et al., 2020).

The spinning wheel is a circular game board inspired by the roulette table game. Roulette table game is one of the most famous games in the gaming world. Spinta that has been modified for learning is to include images and information on various materials so that students are interested in the materials and information provided and can be fun for students (Salsabila et al., 2020). In addition to the Spining wheel conveying messages can be done through picture card media or flashcards. Flashcards can be made as attractive as possible so that children are interested and feel happy and can affect children's knowledge (Selviyanti et al., 2019)

MATERIALS AND METHODS

This type of research is quantitative research with the quasi-experiment method (quasy experiment). The design used in this study is two group pretest-posttest. In this study, the subject group was taken one measurement at the beginning (pretest) before the intervention (treatment) and after that the measurement was carried out again at the end (post-test). The variables in this study include independent variables (free variables), namely the education of game methods using spinta media and flash cards, while dependent variables (bound variables) namely knowledge, attitudes and actions of elementary school children about washing hands with soap (CTPS). The population in this study is students/I SDN 07 and 04 Bengkulu Tengah with a sample calculation of 37 respondents, this study uses two groups, namely the intervention group of 37 respondents and the control group of 37 respondents, so that the total sample becomes 74 respondents. This research was conducted in May - June 2022. The instrument used in this study is a questionnaire about hand washing with soap that contains questions and statements of knowledge, attitudes and actions. Data analysis in the study using the Wilcoxon Signed Rank Test and Mann-Whitney

RESULTS AND DISCUSSION

This analysis was carried out to find out the average knowledge, attitude and actions of students/I grade II SDN 07 and SDN 04 Bengkulu Tengah about washing hands with soap. The results of the distribution can be seen in the table below:

Table 1: Average Knowledge Before And After Given Spinta Media And Flashcard Hand Washing With Soap On Students Of SDN 07 And SDN 04 Central Bengkulu.

Variable	N	Mean ± SD	Min-Max	95% CI
Intervention Group				
Before (Pre)	37	4,86 ± 1,686	1-7	4,3 – 5,4
After (Post)	37	7,59 ± 1,771	4-10	7,0 – 8,1
Control Group				
Before (Pre)	37	3,68 ± 1,780	1-7	3,0 – 4,2
After (Post)	37	5,41 ± 1,892	1-9	4,7 – 6,0

table 4.1, the results were obtained that the average knowledge in the intervention group before being given game method education using spinta media was 4,86 and after being given an intervention the average knowledge was 7.59, with a standard deviation from 1,686 to 1,771, before the intervention a minimum value of 1 and a maximum of 7, after being given an intervention a minimum value of 4 and a maximum of 10. It is believed that 95% of knowledge before being given game method education using spinta media is in the range of 4.3 to 5.4 and after being given intervention is in the range of 7.0 to 8.1.

In the group Control concluded that the average knowledge in the control group before being given game method education using flashcard media is 3.68 and after being given game method education using flashcard media is 5,41, with a standard deviation from 1,780 to 1,892. before the intervention the minimum value is 1 and the maximum is 7, after being given an intervention the minimum value is 1 and the maximum is 9. It is believed that 95% of knowledge before being given education the game method using flashcard media is in the range of 3.0 to 4.2 and after being given the intervention is in the range of 4.7 to 6.0.

Table 2: The Average Attitude Before and After Being Given By Spinta Media And Flashcards Washing Hands Using Soap On Students Of SDN 07 And SDN 04 Central Bengkulu.

Variable	N	Mean ± SD	Min - Max	95%CI
Intervention Group Attitude				
Before (Pre)	37	26,59 ± 3,149	19-33	25,5 – 27,6
After (Post)	37	34,35 ± 2,418	30-38	33,5 – 35,1
Control Group Attitude				
Before (Pre)	37	27,19 ± 3,161	21-34	26,1 – 28,2
After (Post)	37	29,86 ± 3,787	22-35	28,6 – 31,1

From table 4.2, the results were obtained that the average attitude in the intervention group before being given game method education using spinta media was 26.59 and after being given game method education using spinta media Which is 34.35 with a standard deviation from 3,149 to 2,418 before being given an intervention value of at least 19 and a maximum of 33, after being given an intervention a minimum value of 30 and a maximum of 38. It is believed that 95% of the attitude before being given education on the game method using spinta media is in the range of 25.5 to 27.6 and after being given the intervention is in the range of 33.5 to 35.1, while in the control group the average attitude of SD 04 students before being given education on the game method using flashcard media which is 27.19 and after being given the game method education using spinta media which is 29.86 with a standard deviation from 3,161 to 3,787. Before being given an intervention a minimum value of 21 and a maximum of 34 after being given an intervention a minimum value of 22 and a maximum of 35. It is believed that 95% of the attitude before being given the game method education using flashcard media is in the range of 26.1 to 28.2 and after being given the intervention is in the range of 28.6 to 31.1.

Table 3: The Average Of Actions Before And After Being Given By Spinta Media And Flashcards Washing Hands With Soap On Students Of SDN 07 And SDN 04 Central Bengkulu.

Variable	N	Mean ± SD	Min - Max	95%CI
Intervention Group Action				
Before (Pre)	37	1,65 ± 0,889	1-4	1,4 – 1,9
After (Post)	37	4,97 ± 2,242	1-8	4,2 – 5,7
Control Group Action				
Before (Pre)	37	1,54 ± 0,767	1-4	1,3 – 1,8
After (Post)	37	3,84 ± 2,487	1-8	3,0 – 4,7

Based on table 4.3, the results were obtained that the average action in the intervention group before being educated on the game method using spinta media was 1.65 and after being given the game method education using spinta media was 4.97, with a standard deviation from 0.889 to 2,242. Before being given an intervention value of at least 1 and a maximum of 4, after being given an intervention a minimum value of 1 and a maximum of 8. It is believed that 95% of the attitude before being given game method education using spinta media is in the range of 1.4 to 1.9 and after being given intervention is in the range of 4.2 to 5.7 while in the control group the average action before being given game method education using flashcard media which is 1.54 and after being given game method education using spinta media which is 3.84 with a standard deviation from 0.767 to 2,487. Before being given an intervention value of at least 1 and a maximum of 8, after being given an intervention a minimum value of 1 and a maximum of 8. It is believed that 95% of the attitude before being given the game method education using flashcard media is in the range of 1.3 to 1.8 and after being given the intervention is in the range of 3.0 to 4.7.

Table 4: Differences in the Effectiveness of Game Method Education Using Spinta and Flashcard Media on Hand Washing Behavior Using Soap in Students of SDN 07 and SDN 04 Central Bengkulu.

Variable	N	Skor	Sebelum	Sesudah	ΔMean	P*
Knowledge						
Intervention	37	Mean ± SD	4,86 ± 1,686	7,59 ± 1,771	2,73	0,000
Control	37	Mean ± SD	3,68 ± 1,780	5,41 ± 1,892	1,73	0,000
P**			0,004	0,000		
Attitude						
Intervention	37	Mean ± SD	26,59 ± 3,149	34,35 ± 2,418	7,76	0,000
Control	37	Mean ± SD	27,19 ± 3,161	29,86 ± 3,787	2,76	0,000
P**			0,571	0,000		
Action						
Intervention	37	Mean ±SD	1,65 ± 0,889	4,97 ± 2,242	3,32	0,000
Control	37	Mean ±SD	1,64 ±0,767	3,84 ± 2,478	2,2	0,000
P**			0,691	0,014		

Based on table 4.4, the results of the knowledge data test, attitude and actions of the intervention and control group using the Wilxocon Signed Rank Test obtained knowledge and attitude value of p Value = 0.000 ≤ 0.05, action p Value = 0.014 ≤ 0.05. Based on the results of the statistical test using

the Mann-Whitney test that there is a difference in knowledge and attitude score of $0.000 < 0.05$, action $0.014 < 0.05$. Based on the analysis, it can be seen that there are significant differences in knowledge, attitudes and handwashing actions in elementary school students between the intervention group and the control group. It means that Media

Spinta and flashcard are effective in improving knowledge, attitude and action about hand washing. From the results of Δ Mean obtained the result that Δ Mean knowledge of the intervention group 2.73 control group 1.73, Δ Mean attitude of the intervention group 7.76 control group 2.76, Δ Mean action of the intervention group 3,32 control group 2.2 average range Δ Mean in the intervention group using spinta media was higher than the control group using flashcard media. This means that spinta media is more effective in increasing knowledge, attitudes and actions about washing hands with soap.

DISCUSSION

1. Knowledge of Students/I at SDN 07 and 04 Central Bengkulu About Hand Washing with Soap

In this research intervention group, there was an increase in knowledge before being given education on the game method using the knowledge average spinta media, namely 4.86 and after being given education on the game method using spinta media, the average knowledge increased to 7.59, while in the control group there was an increase in knowledge before being given education on the game method using flashcard media, knowledge, namely 3.68 and after being given education on the game method using flashcard media, the average knowledge increased to 5,41. In line with Sugiarto's research (2019) there is an increase in knowledge after being given a health education in the form of a demonstration about washing hands with soap.

The results of the Pradana (2021) research were obtained from the knowledge of hand washing using soap (CTPS) for school-age children before being given health education, most of the knowledge was sufficient. After being given health education most of the knowledge increases to be good. In line with Fauzan's research (2017) it was found that students had almost some good knowledge (41%), a small part of sufficient knowledge (21.8%), almost some of sufficient knowledge (37.2%), then most (61.5%) students had good handwashing behavior and almost some (38.5%) students had poor handwashing behavior. Natsir (2018) obtained the result that there was an increase in knowledge before being given PHBS counseling about CTPS mostly (56.7 %) after being given the extension increased to almost all (93,3%).

Notoadmojo's research (2012) suggests that knowledge is the result of knowing and occurs after a person senses a certain object. Sensing occurs through the five human senses, namely sight,

sensing, smell, taste and touch. Knowledge can be obtained among others through both curricular, non-curricular and extracurricular education. Knowledge can also be obtained from the knowledge of others, such as hearing, seeing directly and through communication tools such as television, radio, books and others.

2. The Attitude of Students/I in SDN 07 and 04 Central Bengkulu About Washing Hands Using Soap

In the intervention group of elementary school students 07 before being given game method education using spinta media the average attitude is 26,59 and after being given game method education using spinta media the average attitude is 34.35, while in the control group of elementary school students before being given game method education using flashcard media the average attitude is 27.19 and after being given game method education using spinta media the average attitude is 29.86. In line with Wikurendra's research, E.A (2018) the results of the study resulted in an increase in hand washing with soap after the intervention by 8.21. (Subaris, 2016) The results of the study showed that the majority of respondents' attitudes were positive as many as 34 people (66.7%). Attitude is the driving force to act or respond to a stimulus or object arising from the development and experience of an individual.

A person's attitude is said to be positive if he likes a psychological object or a favorable attitude. A person's attitude is said to be negative if he doesn't like psychological objects or unfavorable attitudes. Rosita ade's research, et al (2021) the results of the study showed that there was an increase in attitude before and after being given CTPS education. Before being given education the average score of 55.60 after being given education increased to 69.80. The results of Sianipar's research, et al (2021) show that there is an increase in knowledge before and after being given an intervention. Sunaryo (2004), stated that attitude is a readiness to respond which is positive or negative to an object or situation consistently. Attitude is the tendency to act from individuals in the form of 70 closed responses to a particular stimulus or object.

Actions of Students/I at SDN 07 and 04 Central Bengkulu About Washing Hands with Soap In the intervention group of elementary school students 07 the average action before being educated on the game method using spinta media is 1.65 and the average action after being given the game method education using spinta media increased to 4.97, while in the control group of elementary school students 04 the average action before being given game method education using flashcard media is 1.54 and after being educated on the game method using flashcard media the average action increased to 3.84. In line with the research (Ahmad et al., 2019) found that 59.3% of children are not skilled in washing hands with soap (CTPS). After being given health education,

there are results that have increased to 88.9% of children who have been skilled in washing hands with soap (CTPS).

Ernida's research, et al (2021) the results of the research showed that after hand washing education, the results of the level of action were obtained after being given hand washing intervention. Marwati (2018) the results of this study showed that students who washed their hands correctly during the pretest (22.7%) and after the posttest increased to (90.9%) while students who washed their hands incorrectly during the pretest (77.3%) and after the posttest decreased to (9.1%). Trijayanti (2019) research shows that students' treatment related to hand washing habits using soap is good as many as 40 people (78.4%). The habit of students washing their hands with soap is applied at home because of the availability of water and soap, but students also wash their hands at school but do not use soap. Simatupang, et al (2018) showed that there was an increase in action before and after being given health education regarding hand washing by 2.94.

3. The Effectiveness of Game Method Education Using Spinta Media and Flashcard

Obtained the results of the knowledge, attitude and action data test of the intervention and control group by using the Wilcoxon Signed Rank Test obtained knowledge and attitude value $p \text{ Value} = 0.000 \leq 0.05$, action $p \text{ Value} = 0.014 \leq 0.05$. Based on the results of the statistical test using the Mann-Whitney test that there is a difference in knowledge and attitude score of $0.000 < 0.05$, action $0.014 < 0.05$. Based on the analysis, it can be seen that there are significant differences in knowledge, attitudes and handwashing actions in elementary school students between the intervention group and the control group. This means that Spinta Media and flashcard are effective in improving knowledge, attitudes and actions about hand washing. From the results of ΔMean , the average range of ΔMean was obtained in the intervention group using spinta media was higher than in the control group using flashcard media. This means that spinta media is more effective in increasing knowledge, attitudes and actions about washing hands with soap. This is in line with Rahman (2021)'s research based on the Wilcoxon test, the value of $p \text{ Value} 0,000 \leq 0.05$. In this study there is a difference in knowledge before and after counseling with rotary wheel media on students. It is recommended to use counseling with this spinning wheel media because it is effective in increasing knowledge.

Amalia et al's research (2020) the results of student questionnaire calculations can be categorized as "very strong" because the results of the calculation are 80% which means that students are happy with how to learn while playing using the action media of the spinning wheel. Meanwhile, the effectiveness of the media can be known from the student's learning results with the calculation

reaching 100%. Conclusion The average knowledge of students/I grade II SDN 07 and 04 Bengkulu Tengah before and after being given intervention with Spinta and Flashcard media has increased.

The average attitude of students in grade II SDN 07 and 04 Bengkulu Tengah before and after being given an intervention with Spinta and Flashcard media has increased. The average action of students/I grade II SDN 07 and 04 Bengkulu Tengah before and after being given the intervention with Spinta and Flashcard media has increased. Spinta media is more effective in increasing the knowledge, attitudes and actions of grade II children about washing hands with soap than Flashcard media.

CONCLUSION

For Health Service Institutions, it is expected to be a health promotion information medium for elementary school children with the game method using spinta and flashcard media as a learning medium about washing hands with soap. For SDN 07 and 04 Bengkulu Tengah, it is hoped that the school will be able to help improve knowledge, attitudes and actions about washing hands with soap through learning media using games. For Other Researchers, the results of this study are expected to provide references and information for researchers who want to conduct further research related to hand washing with soap. The next researcher can develop research variables in addition to existing variables.

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