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THE INFLUENCE OF HEALTH PROMOTION THROUGH LEAFLET MEDIA ON STUDENTS KNOWLEDGE ABOUT HANDWASHING WITH SOAP

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ABSTRACT
Handwashing with soap is crucial in preventing infectious diseases, especially in school environments. However, students' knowledge about this is often suboptimal. Health promotion through leaflet media can be an effective solution to improve students' knowledge about handwashing with soap. The aim of this study is to determine the effect of health promotion through leaflet media on students' knowledge of handwashing with soap at SDN 105361 Lubuk Cemara, Perbaungan District. This research uses quantitative research, a quasi-experimental design with a one-group pre-test-post-test approach. The research sample consisted of 70 fifth-grade students selected through purposive sampling. The data collection method used in the study is a questionnaire on handwashing with soap. Data analysis conducted includes univariate analysis and bivariate using the non-parameteric Wilcoxon test. The results of the Wilcoxon statistical test obtained a pvalue = 0.000 ($p < 0,05$) with an average increase in pretest and post-test knowledge of 4.88. There is an influence of health promotion through leaflet media on students' knowledge levels regarding handwashing with soap at SDN 105361 Lubuk Cemara, Perbaungan District.

Keywords: children; handwash with soap; health promotion; leaflet

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INTRODUCTION

Good and proper handwashing practice is by using soap. Handwashing with Soap (CTPS) is an effort to remove dust and dirt from hands, starting from the fingertips, nails, and other skin surfaces using soap and running water so that microorganisms such as bacteria, viruses, or other parasites can be reduced in number and prevent disease (Elvira et al., 2021). The skill of handwashing must be understood and applied regularly as part of infection prevention measures. However, people often underestimate the act of handwashing, even though it has a significant positive impact on public health (Allo et al., 2021).

Washing hands with soap is the first indicator in the implementation of Healthy and Clean Living Behavior (PHBS) in schools. The implementation of PHBS in schools is very important for students, especially for elementary school students, aged 6 to 12 years. During this period, they are at risk of contracting various diseases due to high levels of physical activity and social interaction, as well as being in the stage of forming habits and behavior patterns (Wilandika et al., 2023). Therefore, instilling PHBS values in elementary schools, especially regarding handwashing, is a crucial period because during this time, children have a great potential to become agents of change in promoting healthy living habits not only within the school environment but also within families and the community. Strengthening

PHBS education in elementary schools not only produces quality human resources but also maintains, improves, and protects the health of future generations (Hasibuan et al., 2023).

Findings from the 2018 Basic Health Research indicate that only about 49.8% of the population aged over 10 years are able to properly wash their hands. The province with the highest percentage is Bali (67.4%), while the lowest is Papua (26.7%). Additionally, the latest analysis from the School Sanitation Profile 2022 shows that approximately 19,923 educational units across all levels, equivalent to 1.5 million Indonesian children, are not equipped with handwashing facilities with soap and water (UNICEF Indonesia, 2022). Furthermore, data from the North Sumatra Health Profile 2022 shows that in North Sumatra Province, only 39.38% of the population practices Handwashing with Soap (CTPS). The highest percentage is in Langkat District (100%), while the lowest is in North Tapanuli District (0.00%). Meanwhile, in Serdang Bedagai District, the percentage of the population practicing handwashing with soap is also less than 50%, at only 26.37%. The Health Profile of Puskesmas Plus Perbaungan in 2022 shows that in Perbaungan District, only 40% of people practice washing their hands with soap and in Lubuk Cemara Village, 51.39% of people practice washing their hands with soap.

The ineffective practice of handwashing with soap, especially at crucial times such as after using the toilet or before eating, can increase the risk of diseases like diarrhea and ARI (Acute Respiratory Infection), particularly among school-aged children. As a result, these illnesses can disrupt their daily activities, such as missing school for extended periods (Ejemot-Nwadiaro, 2021). The National Basic Health Research (Riskesdas) Report in 2019 states that in Indonesia, ARI and diarrhea are two diseases that frequently occur in both children and adults. WHO and UNICEF report that every year, diarrhea causes 1.9 million toddler deaths and there are approximately 2 billion cases of diarrhea worldwide (Directorate General of Disease Prevention and Control, Ministry of Health RI, 2023). Based on the Indonesian Health Profile 2022, one of the contributors to mortality rates in Indonesia is diarrhea. For all age groups, the diarrhea service coverage is 35.1%, and for toddlers, it is 26.4%. Meanwhile, the coverage for identifying ARI cases is 38.8%.

Diarrhea and Acute Respiratory Infections (ARI) can be minimized through various preventive measures, one of which is by improving student health at the elementary school level regarding handwashing with soap (Handayani et al., 2021). The Global Handwashing Partnership states that Handwashing with Soap (CTPS) behavior can reduce the number of diarrhea cases by up to 48% and can decrease the risk of acute respiratory infections by 16-23% (Ministry of Health RI, 2023). Thus, the more frequent the habit of handwashing with soap, the lower the risk of contracting diseases. Conversely, the less frequent the habit of handwashing with soap, the higher the risk of contracting diseases (Radhika, 2020). Therefore, Handwashing with Soap (CTPS) among school children is crucial to initiate their healthy living habits.

Children often have the habit of paying less attention to hand hygiene, especially when they are in a school environment (Riastawaty, 2021). The lack of handwashing habits in school-aged children can be attributed to their limited knowledge and understanding (Maelissa & Ukru, 2020). Enhancing knowledge about handwashing with soap from an early age is an essential step to instill sustainable clean and healthy living habits, thereby protecting children from infectious diseases (Rosdiyawati et al., 2023).

Lawrence Green's theory reveals three factors that shape an individual's health behavior: predisposing factors, enabling factors, and reinforcing factors. In this theory, knowledge falls under predisposing factors, which are the underlying factors that motivate individuals or groups to act on specific behaviors (Pakpahan et al., 2021). Therefore, efforts are needed to strengthen the understanding and knowledge of school-aged children about handwashing with soap. The higher the level of someone's knowledge about Handwashing with Soap (CTPS), the higher the application of CTPS (Haque., 2020). Increasing knowledge can be achieved through health promotion, both individually and in groups (Susanti, 2019). According to WHO, health promotion is the process of enhancing individuals' and communities' abilities to utilize factors impacting their health to improve their health status (Pakpahan et al., 2021).

To effectively convey health promotion, media is required as a tool to deliver information to the target audience, making it easily understood by the intended recipients. One of the media that can be utilized is print media, specifically in the form of leaflets. A leaflet is an informational source in the form of a pamphlet accompanied by unique images to capture the reader's interest. Leaflets use communicative language to facilitate readers in understanding the information presented. The appearance and design of leaflets tend to be simple and easy to carry around (Wahyuni et al., 2022). Research by Emilia & Nurjannah (2019) stated that health promotion through leaflets is effective in improving knowledge about handwashing with soap among students.

Based on an initial survey conducted in January 2024 at SDN 105361 Lubuk Cemara, Perbaungan Sub-district, it was found that, out of 10 students interviewed, 7 students did not have adequate knowledge about proper handwashing with soap, especially regarding the correct steps. Furthermore, some students were absent from school due to diarrhea. During the Covid-19 pandemic, a rule was implemented to wash hands with soap before entering the classroom, but this rule is no longer being enforced. Moreover, although the school has provided handwashing facilities, soap is not provided, which can also reduce the practice of handwashing with soap among students. Based on the aforementioned issues, this research aims to to determine the effect of health promotion through leaflet media on students' knowledge of handwashing with soap at SDN 105361 Lubuk Cemara, Perbaungan District.

METHOD

This research is a quantitative study using a Quasi-Experimental design with a One Group Pretest-Posttest approach. The study was conducted at SDN 105361 Lubuk Cemara, Perbaungan Sub-district. The population for this study consisted of all students at SDN 105361 Lubuk Cemara, Perbaungan Sub-district. The sample comprised 70 students from classes 5A and 5B, selected using purposive sampling technique. The inclusion criteria for this study were: 1) Grade V elementary school students, 2) Willing to participate as respondents, 3) Students in good health, and 4) Present during the research. The exclusion criteria included: 1) Unwilling to participate as respondents, 2) Absent from school during the research period. The reason for choosing grade 5 students as the research sample is that grade 5 elementary school students are generally around 10-11 years old, a stage where they are in a more mature cognitive development phase. They are better able to understand information compared to younger students, such as those in grades 1-4 (Aditya et al., 2022). Therefore, the knowledge provided through the leaflet media is more likely to be accepted and well-understood by students at this age.

The independent variable in this study is "Health promotion through leaflet media about handwashing with soap", while the dependent variable is "Students' knowledge about

handwashing with soap." The data collection method used in the study is a questionnaire on handwashing with soap, modified from Prayogi's research (2017). The questionnaire consists of 20 multiple-choice questions designed to measure the respondents' pretest-posttest knowledge. According to Arikunto (2010), the assessment of the level of knowledge can be grouped into three categories: good (≥76%-100%), fair (60%-75%), and poor (≤60%). This questionnaire has been tested for validity and reliability. The item-total correlation values ranged from 0.359-0.601, with r-value > r-table (0.3494) and *Cronbach's Alpha* of 0.796 > 0.6.

The intervention in this study uses a leaflet media containing information about the definition of CTPS, the benefits of CTPS, the appropriate times for CTPS, and the steps of CTPS. The data obtained will be analyzed using SPSS and will undergo univariate and bivariate tests. Univariate analysis is used to observe the frequency distribution of respondents' characteristics and the frequency distribution of respondents' knowledge before and after health promotion about handwashing with soap through leaflet media. Bivariate analysis uses the Wilcoxon test because the knowledge data is numerical and the data distribution before and after the health promotion is not normally distributed (< 0.05) using the *Shapiro-Wilk* normality test.

RESULTS

Table 1.
Distribution of Respondent Characteristics (n=70)

Category	**f**	%
Gender		
Man	34	48,6
Woman	36	51,4
Age		
10 years	23	32,9
11 years	45	64,3
12 years	2	2,9

Table 1 shows that of the 70 students who were respondents in this study, there were more female students, namely 36 students (51.4%) compared to 34 male students (48.6%). Based on age characteristics, the respondents in this study were in the age range of 10-12 years. The majority of respondents, 45 students (64.3%), were 11 years old, while 23 students (32.9%) were in the 10 year age group, and only 2 students (2.9%) were 12 years old.

Table 2.
Frequency Distribution of Respondents' Knowledge Before Health Promotion about Handwashing with Soap Through Leaflet Media (n=70)

Knowledge of Handwashing with Soap	n	%
Good	15	21,4
Fair	48	68,6
Poor	7	10,0

Table 2 shows that of the total 70 respondents, only a small portion, namely 15 students (21.4%), had knowledge in the "good" category. This shows that before health promotion was carried out, only a few respondents had an in-depth understanding of CTPS (Handwashing with Soap). Meanwhile, the majority of respondents, 48 students (68.6%), had fair knowledge. There was also a small number of respondents, namely 7 students (10.0%), who had knowledge in the "poor" category.

Table 3.
Frequency Distribution of Respondents' Knowledge After Health Promotion about Handwashing with Soap Through Leaflet Media (n=70)

Knowledge of Handwashing with Soap	**f**	%
Good	68	97,1
Fair	2	2,9

Table 3 shows that of the total 70 respondents, the majority, namely 68 students (97.1%), had knowledge in the "good" category after the health promotion was carried out. This shows a drastic increase in respondents' understanding about washing hands with soap through leaflet media after they received the intervention. Only a few respondents, to be precise 2 students (2.9%), still had knowledge in the "fair" category. This percentage shows that a small number of respondents still need additional understanding after the intervention was carried out. Interpretation of this data illustrates the success of intervention through leaflet media in increasing respondents' overall knowledge.

Table 4.
Data Normality Test

	Shapiro Wilk	Information
Pre-test	0.009	Abnormal
Post-test	0.000	Abnormal

Table 4 shows that the results of the data normality test using the Shapiro-Wilk method produced very low significance values for both knowledge of washing hands with soap pre-test (0.009) and knowledge of washing hands with soap post-test (0.000). This low significance value indicates that the two groups of data, both before the intervention (pre-test) and after the intervention (post-test), are not normally distributed where the significance value is $p < \alpha$ (0.05) so this study will use non-parametric statistical tests Wilcoxon to analyze the differences between pre-test and post-test.

Table 5.
The Influence of Health Promotion Through Leaflet Media on Students' Knowledge About Handwashing with Soap at SDN 105361 Lubuk Cemara, Perbaungan District

	Mean	Std. Deviation	*P-value*
Pre-test Knowledge	14.11	1.930	
Post-test Knowledge	18.99	1.346	0.000

Table 5 shows a significant difference between the average knowledge of students about washing hands with soap before (pre-test) and after (post-test) the implementation of health promotion through leaflet media at SDN 105361 Lubuk Cemara, Perbaungan District. In the pre-test, the average student knowledge was 14.11 with a standard deviation of 1.930 while in the post-test, the average knowledge increased to 18.99 with a standard deviation of 1.346. This means that the average knowledge has increased by 4.88. From the results of the Wilcoxon test, the p-value obtained is 0.000. This result shows that the p value is smaller than the significant level ($p < 0.05$). Thus, it is concluded that there is an influence of health promotion through leaflet media on students' level of knowledge about washing hands with soap at SDN 105361 Lubuk Cemara, Perbaungan District.

DISCUSSION

Before receiving health promotion through leaflet media, most respondents had a sufficient level of knowledge about handwashing with soap. This indicates that the respondents' understanding of handwashing with soap was not yet optimal. Moreover, there were 7 respondents who had poor knowledge about handwashing with soap. This suggests that before the health promotion

was conducted, some respondents had inadequate understanding or even no understanding at all about handwashing with soap.

The lack of knowledge among respondents about handwashing with soap could be due to a lack of information sources. The minimal effort in providing health education by teachers and health workers has led to children's limited understanding of the importance of proper handwashing with soap. As a result, children are less motivated to wash their hands with soap (Susanti, 2019). According to interviews with the school principal, the school has not provided additional lessons on Clean and Healthy Behavior (PHBS) to the students. However, there was a previous handwashing with soap socialization conducted by health workers, but there was no review or evaluation carried out by those who provided the socialization regarding the implementation of handwashing with soap.

Halifa's research (2022) revealed that knowledge about handwashing with soap behavior has a significant relationship with a p-value of 0.002 < 0.05. This study explains that poor knowledge will lead to poor handwashing behavior as well. Conversely, good knowledge will foster good handwashing habits. Therefore, knowledge is an essential factor that needs to be improved to create a person's behavior (Pakpahan et al., 2021). The age of children is an ideal age for imagination, so the process of disseminating knowledge and understanding to them requires intermediaries (Norhikmah et al., 2022). Leaflet media can be an appropriate intermediary in conveying knowledge about handwashing with soap to children. By using attractive pictures and text that align with their level of understanding, the leaflet can stimulate the interest and imagination of children, making it easier for them to understand the importance of handwashing with soap (Antari et al., 2020). Thus, the leaflet media can be an effective tool in helping children acquire essential knowledge to maintain their health and prevent disease transmission.

This is in line with the results of this study, where after providing health promotion through leaflet media about handwashing with soap, there was a significant increase in students' knowledge, with 68 students (97.1%) falling into the good knowledge category. According to Riyanto & Budiman (2013), knowledge can be influenced by educational, informational, social, cultural and economic factors, environment, experience, and age (Umboh et al., 2022). In this study, the increase in knowledge could occur because students have received additional information from the handwashing with soap health promotion activities, thus improving their knowledge. This is consistent with Junardi's research (2020), which stated that there was an increase in knowledge after implementing handwashing with soap health education.

Furthermore, this study found that health promotion through leaflet media among elementary school students has a significant effect on changing students' knowledge about handwashing with soap. These results indicate that the health promotion intervention through leaflet media has had a positive impact in enhancing students' knowledge about the importance of washing hands with soap. This finding is also consistent with Antari et al.'s research (2020), which stated that leaflet media influences the increase in students' knowledge about handwashing with soap. The results of this research are also in line with research by Trisnawati et al. (2023) that there are differences significant level of knowledge before and after hand washing education using leaflet media. By using the paired t test, a pvalue of 0.000 was obtained (pvalue < 0.05). Leaflet media has a good influence on increasing students' knowledge about washing hands with soap. Similarly, Yusnita & Nurmaria's study (2019) which gets the results that leaflet media is effective in improving knowledge about health, including the practice of handwashing with soap, making leaflet media an essential step in enhancing health awareness and behavior in the community.

The findings of this studi also support Maryunani's research (2022), which indicates that leaflet media significantly influences the increase in students' knowledge of handwashing with soap. In this context, the leaflet media has proven effective in enhancing students' understanding of the topic od handwashing with soap. Utilizing leaflet media facilitates the systematic delivery of information and engages students, thereby fascilitating a more effective learning process. According to Notoatmodjo (2012) as cited in Aditya et al. (2021), knowledge is the result of knowing that occurs after a person perceives a particular object. This cognitive process occurs based on human senses, namely sight, hearing, smell, taste, and touch. Knowledge is a very important domain in shaping a person's actions. The knowledge encompassed in the cognitive domain has six levels: knowing, understanding, applying, analyzing, synthesizing, and evaluating.

In this study, when students read the health promotion media, namely the leaflet, they use their sense of sight to view the images and text, as well as their sense of hearing to listen to the shared information. After receiving the information through the leaflet, students can then understand the concept of the importance of handwashing with soap. Understanding is the second level in the hierarchy of knowledge. This process allows students to gain additional knowledge about the practice of handwashing with soap. Thus, through health promotion via leaflet media, students can enhance their knowledge about handwashing with soap from merely knowing (the first level) to understanding. Furthermore, it is hoped that students' knowledge will progress to the third level, which is application, so they can apply this knowledge in their daily lives, such as regularly washing their hands with soap, especially at crucial times (Aditya et al., 2021).

Health promotion through leaflet media is an effective strategy in enhancing knowledge because leaflets have several advantages. First, leaflets can be distributed on a mass scale at a relatively low cost, making it possible to reach many people quickly. In a leaflet, the conveyed information can be tailored to the target audience, making it more relevant and easier to understand. Another advantage is that leaflets can be kept and reread by the recipients, allowing health messages to be continually reinforced in their minds. The leaflet design should be attractive, have informative and accurate content, and be distributed appropriately to effectively reach the target audience (Jatmika et al., 2019).

CONCLUSION

Based on the research conducted on 70 students, the researcher can conclude that from the Wilcoxon statistical test, a p-value of 0.000 was obtained. This means that there is an influence of health promotion through leaflet media on the level of students' knowledge about handwashing with soap at SDN 105361 Lubuk Cemara, Kec. Perbaungan, with an average increase in pretest and post-test knowledge of 4.88.

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