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The Importance of Handwashing with Soap for the Health and National Defense Values of Students at Panunggangan 4 Elementary School

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Abstract

This study aims to determine the level of knowledge, awareness, and habits of elementary school students regarding Handwashing with Soap (CTPS) behavior at SDN 4 Panunggangan. CTPS is an important part of clean and healthy living behavior that plays a role in preventing the spread of disease, especially in early childhood. The research method used a qualitative approach through the distribution of questionnaires to 25 first-grade students and structured interviews with two teachers. The results showed that some students had understood the importance of maintaining hand hygiene and washing hands after using the toilet. However, students' understanding of the appropriate time to wash their hands, especially after playing outdoors, and knowledge of the correct handwashing steps are still low. Teacher interviews revealed that the lack of CTPS habits at home, students who often forget, and improper handwashing techniques are the main factors that influence CTPS behavior at school. These findings indicate that although students' basic knowledge is quite good, habituation, mentoring, and environmental support are needed for consistent CTPS behavior.

Keywords: *Handwashing with Soap, Clean Living Habits, Elementary School Students, Health Behavior, CTPS.*

INTRODUCTION

Clean and healthy living behaviors (PHBS) should be an integral part of public health habits. Adopting a clean lifestyle is a form of self-awareness to consistently maintain and improve bodily conditions to stay healthy. Improving proper hygiene habits also contributes significantly to supporting the achievement of Sustainable Development Goal (SDG) 3, namely Good Health and Well-Being, specifically the target emphasizing the health and well-being of all people worldwide (Pratami & Nugraheni, 2024). By practicing clean and healthy habits, our bodies indirectly become more resilient against various diseases. Therefore, health should not be neglected and must be maintained from an early age.

This is vital because health is a key aspect every individual needs to work and perform optimally in daily life. Efforts to improve health can be initiated by maintaining hand hygiene, primarily through handwashing (Zakaria & Nurmayunita, 2022). The

diversity of bacteria found on the skin is known to be a major cause of infection and the spread of various diseases. By practicing handwashing, bacteria attached to the body—acquired through human contact with the environment—can be eliminated, thereby preventing infections transmitted through the hands (Asna Lailatul Fadhila et al., 2025).

Handwashing is the deliberate act of cleaning one's hands to prevent the spread of various diseases. It is crucial because hands play a central role as the primary medium for transmitting disease-causing microorganisms, which can be transferred from various objects and body parts. However, washing hands with water alone is not effective enough to maintain cleanliness, as water cannot completely remove dirt and microorganisms. Using soap during handwashing maximizes hygiene because soap dissolves grease, bacteria, and dirt that adhere to the skin through friction (Elvina et al., 2025).

Handwashing with Soap (HWWS or CTPS) involves cleaning hands using soap and running water to remove bacteria, dirt, and viruses, thereby preventing the spread of diseases and maintaining overall health. While it is a simple and easy action, it offers enormous benefits in preventing deadly diseases. This habit can reduce the risk of diseases such as diarrhea and Acute Respiratory Infections (ARI) by more than 50%, which are often the leading causes of death in children. Additionally, handwashing with soap and running water is effective in reducing the risk of other diseases such as hepatitis, typhus, worms, skin infections, eye disorders, and avian flu. Despite this, many people still consider this activity unimportant, only washing their hands with soap when they feel smelly, oily, or visibly dirty (Asna Lailatul Fadhila et al., 2025).

In Indonesia, many children around the age of 10 have not yet practiced proper handwashing. The most common reason cited is a lack of understanding regarding the importance of handwashing with soap (Pratami & Nugraheni, 2024). This situation requires serious attention, considering that at this age, children tend to be highly active and are at high risk of contracting various diseases. Therefore, it is crucial to instill awareness and education about HWWS in children, as it directly impacts their health. Instilling this habit from an early age ensures they continue to practice cleanliness into adulthood.

Maintaining health is not just a personal or group matter but also a concrete form of participation in national defense (*Bela Negara*). Efforts to maintain children's health have a massive positive impact on their future and the nation as a whole. Healthy, strong, and capable children will grow into a resilient, intelligent, and productive future generation, expected to make real contributions to national progress. Therefore, children's awareness must be continuously increased through education, parental role models, and environmental support to strengthen the spirit of national defense and realize SDG 3.

While previous literature has extensively discussed the clinical benefits of HWWS, there remains a research gap regarding how specific school environmental factors influence the consistency of student behavior at the local level. Most prior studies focus on theoretical understanding without linking it to character discipline as a form of civic responsibility. The selection of SDN 4 Panunggangan as the study site is based on preliminary observations indicating a discrepancy between students' theoretical knowledge of hygiene and their actual daily practices, particularly during critical times such as school breaks or before eating at the canteen. What distinguishes this research is its approach to integrating early-age habits as a national preventive strategy to produce a productive generation. Consequently, this study seeks to fill the void in data regarding the unique internal and external inhibiting factors found among students at this specific school.

Thus, this study aims to determine the level of awareness among elementary school children regarding handwashing with soap behavior and the factors causing existing

problems, in order to provide the right solutions. This study is also expected to benefit elementary school children by increasing their knowledge and awareness of correct handwashing techniques. This relates to the research problem formulated for this study: What is the level of knowledge and awareness of students at SDN 4 Panunggangan regarding the importance of Handwashing with Soap (HWWS/CTPS) behavior for health?

METHOD

This study employs a mixed-methods approach, an integrated framework that combines philosophical assumptions with systematic inquiry procedures. As a methodology, it guides the data collection and analysis processes by blending qualitative and quantitative aspects across various research phases. Technically, this method focuses on merging numerical and narrative data within a single research sequence. The primary premise is that the synergy between quantitative and qualitative methods yields a more comprehensive understanding of the research problem than relying on a single approach alone (Creswell, 2023). This research was conducted on Monday, October 27, 2025. The location of the activity was SDN Panunggangan 4 on Jl. HR. Rasuna Said Gang SD N No. 4 / 10, RT. 006 / RW. 005, North Panunggangan, Pinang, Tangerang City, Banten 15143.

A sample is a small part taken from a larger population. By using samples, researchers can conduct research on a more limited and manageable group compared to the entire population (Wicaksono, 2022). The sample of the study consisted of 25 students of SDN Panunggangan 4 and 2 teachers of SDN Panunggangan 4. The data collection techniques used through this approach were interviews and distribution of questionnaires in the form of closed questionnaires. The purpose of this study was to introduce and cultivate the behavior of washing hands with soap (*CTPS*). This approach was carried out to gain a deeper understanding of the importance of handwashing with soap (*CTPS*) and to learn how to wash hands properly and correctly according to the understanding given. The subjects in this study were 1st grade elementary school students who were the main targets of the study and teachers who were involved as respondents to the interview questions at SDN 4 Panugangan.

RESULTS

Closed Questionnaire

Figure 1. Results of the first *pre-test & post-test*

Figure 1 presents comparative data on respondents' responses to the first question, as measured through a pre-test and post-test. In the pre-test session, the majority of respondents, 19 people, stated they agreed (“Yes”), while 5 people disagreed (“No”), and

1 person was in the “Undecided” position. A significant change was seen in the post-test results, where there was an increase in the number of respondents who answered “Yes” to 21 people. In addition, there was a positive shift with a decrease in “No” answers to only 2 people, although the “Undecided” category also slightly increased to 2 respondents.

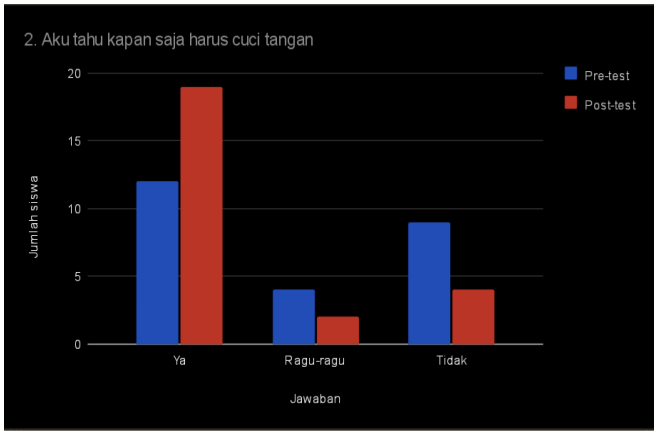

Figure 2. Results of the second *pre-test & post-test*

Figure 2 presents comparative data on respondents' responses to the second question, as measured by pre-test and post-test. In the pre-test session, 12 respondents stated they agreed ("Yes"), while 9 disagreed ("No"), and 4 were in the "Undecided" position. Significant changes were seen in the post-test results, where the number of respondents who answered "Yes" increased to 19. Furthermore, a positive shift was seen with a decrease in "No" answers to only 4 people, while the "Undecided" category also decreased to 2 respondents.

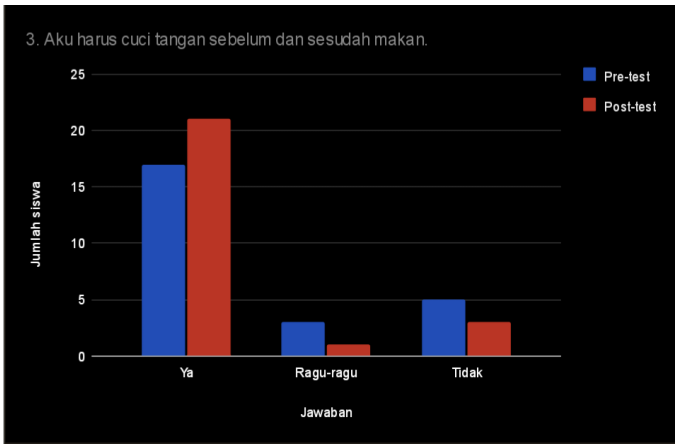

Figure 3. Results of the third *pre-test & post-test*

Figure 3 presents comparative data on respondents' responses to the third question, measured through a pre-test and post-test, regarding the obligation to wash hands before and after eating. In the pre-test session, 17 respondents stated they agreed (“Yes”), while 5 disagreed (“No”), and 3 were in the “Undecided” position. A significant change was seen in the post-test results, where there was an increase in the number of respondents who answered “Yes” to 21 people. In addition, a positive shift was seen with a decrease in “No” answers to only 3 people, while the “Undecided” category also decreased drastically to 1 respondent.

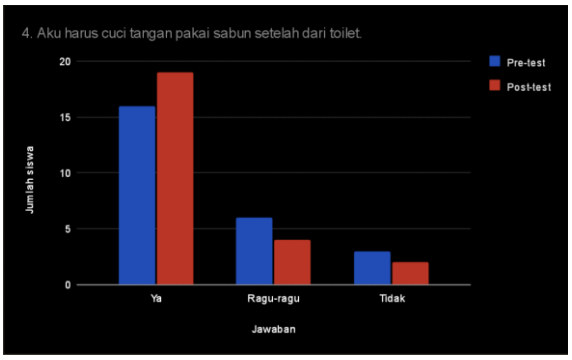

Figure 4. Results of the fourth *pre-test & post-test*

Figure 4 presents comparative data on respondents' responses to the fourth question, measured through a pre-test and post-test, regarding the obligation to wash hands with soap after using the toilet. In the pre-test session, 16 respondents stated they agreed ("Yes"), while 3 people disagreed ("No"), and 6 people were in the "Undecided" position. A significant change was seen in the post-test results, where there was an increase in the number of respondents who answered "Yes" to 19 people. In addition, there was a positive shift with a decrease in "No" answers to only 2 people, and the "Undecided" category was also reduced to 4 respondents.

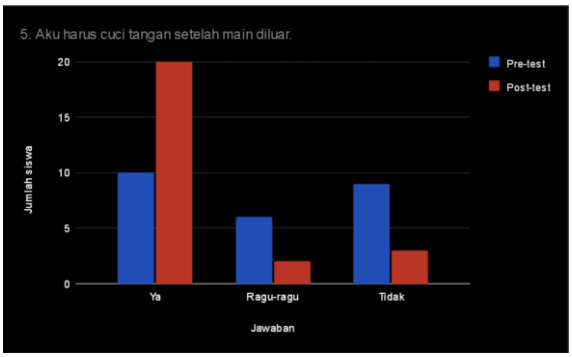

Figure 5. Results of the fifth *pre-test & post-test*

Figure 5 presents comparative data on respondents' responses to the fifth question, measured through a pre-test and post-test, regarding the obligation to wash hands after playing outdoors. In the pre-test session, 10 respondents stated they agreed (“Yes”), while 9 people disagreed (“No”), and 6 people were in the “Undecided” position. A significant change was seen in the post-test results, where there was a sharp increase in the number of respondents who answered “Yes” to 20 people. In addition, there was a positive shift with a decrease in “No” answers to only 3 people, and the “Undecided” category was also reduced to 2 respondents.

Figure 6. Results of the sixth *pre-test & post-test*

Figure 6 presents comparative data on respondents' responses to the sixth question, measured through a pre-test and post-test, regarding knowledge of how to wash hands properly with soap. In the pre-test session, 9 respondents stated they agreed ("Yes"), while 11 disagreed ("No"), and 5 were in the "Undecided" position. Significant changes were seen in the post-test results, where there was a sharp increase in the number of respondents who answered "Yes" to 18 people. In addition, there was a positive shift with a decrease in "No" answers to only 4 people, and the "Undecided" category was also reduced to 3 respondents.

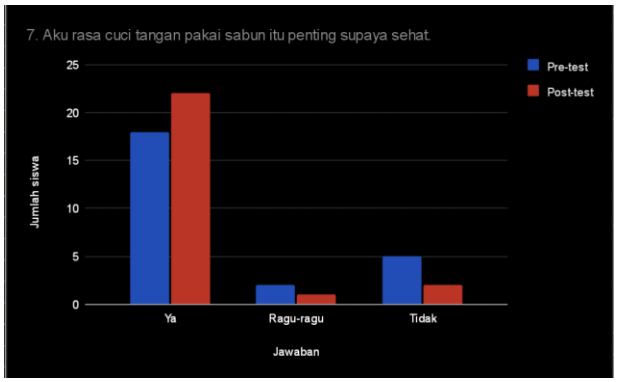

Figure 7. Results of the seventh *pre-test & post-test*

Figure 7 presents comparative data on respondents' responses to the seventh question, measured through a pre-test and post-test, regarding the importance of washing hands with soap for health. In the pre-test session, 18 respondents stated they agreed ("Yes"), while 5 disagreed ("No"), and 2 were in the "Undecided" position. A significant change was seen in the post-test results, where there was an increase in the number of respondents who answered "Yes" to 22 people. In addition, there was a positive shift with a decrease in "No" answers to only 2 people, and the "Undecided" category was also reduced to 1 respondent.

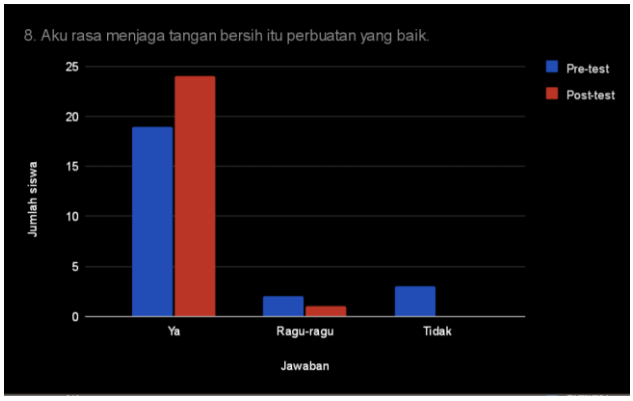

Figure 8. Results of the eighth *pre-test & post-test*

Figure 8 presents comparative data on respondents' responses to the eighth question, measured through a pre-test and post-test, regarding the perception of maintaining hand hygiene as a good deed. In the pre-test session, 19 respondents stated they agreed ("Yes"), while 3 people disagreed ("No"), and 2 people were in the "Undecided" position. A significant change was seen in the post-test results, where there was an increase in the number of respondents who answered "Yes" to 24 people. In addition, there was a positive shift with a decrease in the number of "No" answers to 0 people (no respondents disagreed), and the "Undecided" category also decreased to 1 respondent.

Figure 9. Results of the ninth *pre-test & post-test*

Figure 9 presents comparative data on respondents' responses to the ninth question, measured through a pre-test and post-test, regarding their intention to encourage friends to wash their hands with soap. In the pre-test session, 13 respondents stated they agreed ("Yes"), while 6 disagreed ("No"), and 6 were in the "Undecided" position. A significant change was seen in the post-test results, where there was a sharp increase in the number of respondents who answered "Yes" to 20 people. In addition, a positive shift was seen with a decrease in "No" answers to only 2 people, and the "Undecided" category was also reduced to 3 respondents.

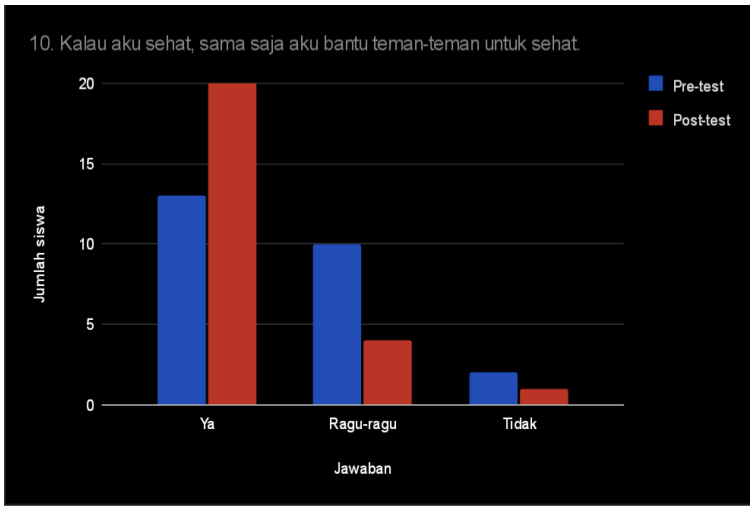

Figure 10. Results of the tenth *pre-test & post-test*

Figure 10 presents comparative data on respondents' responses to the tenth question, measured through a pre-test and post-test, regarding the awareness that personal health also helps the health of friends. In the pre-test session, **13** respondents stated they agreed ("Yes"), **2** disagreed ("No"), and **10** were in the "Undecided" position. Significant changes were seen in the post-test results, where there was a sharp increase in the number of respondents who answered "Yes" to **20** people. In addition, there was a positive shift with a decrease in the number of "No" answers to only **one** person, and the "Undecided" category also drastically reduced to **4** respondents.

Interview Results

Table 1. Questions and Answers to Interview Results

No	Pertanyaan	Respondent 1	Respondent 2
1.	Why do you think the behavior of washing hands with soap is very important to implement in elementary school environments?	"It's important to maintain health, because we don't know what activities children have been doing and how many germs are on their hands."	"It's really important because every time children's hands touch objects that could contain bacteria, they're bound to come into contact with bacteria. And now, it's cough and cold season. Without realizing it, they'll cough and touch their nose or mouth, which can lead to bacteria, so washing their hands is crucial."
2.	How are teachers involved in supporting the habit of clean handwashing in schools?	"Usually before the break, I tell the children to wash their hands thoroughly before eating, then they eat. So the rule is that before eating, they have to wash their hands first."	"At every break, we have a communal meal program, so the children bring their own lunches from home, so we don't have to worry about them buying snacks carelessly. As teachers, we always remind and encourage them to wash their hands before eating; sinks are provided."
3.	What are your views on the students' handwashing habits at this school? Are they disciplined enough, or do they still need some practice?	"Not enough, though. Sometimes kids forget to wash their hands. They're in a rush to eat and come back from class."	"Personally, because our responsibilities differ per class, Mr. Putra might be lacking in his child. My class, I'm in 1B, where handwashing is mandatory before and after meals, so we line up and wash our hands. Overall, for the whole school, this might be lacking because the pressure from each teacher varies."
4.	What obstacles might be faced in raising handwashing awareness among students?	"I brought it from home, usually I never wash my hands at home, so I carried the habit of not washing my hands."	"The awareness that's needed is, first, we always remind students to wash their hands. Second, the obstacle for children is a lack of awareness about the importance of handwashing. Third, discipline. When washing their hands, children are sometimes not disciplined; they just rub their hands, like they're just playing with water."

DISCUSSION

The results of the pre-test and post-test indicate a significant cognitive improvement, as evidenced by the increase in students' understanding of Handwashing with Soap (CTPS) from 78.1% to 92.1%. While these figures suggest that the educational intervention effectively transferred health information, the qualitative findings from teacher interviews reveal a paradoxical "knowledge-practice gap." Despite high scores in understanding, actual discipline in practicing CTPS remains inconsistent among students.

This discrepancy can be analyzed through the Health Belief Model (HBM). Although students recognize the benefits of handwashing (*perceived benefits*), their actual behavior is often obstructed by *perceived barriers*, such as a sense of being rushed, a lack of personal awareness, or the distraction of play. The fact that some students wash their hands casually or merely "play with water" indicates that while the information was received, the internal motivation to perform the technique correctly has not yet been fully internalized.

Furthermore, this study highlights that health behavior is not formed in a vacuum; it is heavily influenced by Social Cognitive Theory, which emphasizes the interaction between personal factors and the environment. The inconsistency in students' discipline is largely rooted in the home environment and parenting patterns. When the rigorous hygiene rules at school are not reinforced by similar habits at home, students tend to view CTPS as a situational obligation rather than a permanent lifestyle habit. Research suggests that the micro-environment of the family often exerts a more lasting influence on habit formation than institutional school rules.

The role of teachers remains crucial as reminders and supervisors who establish mandatory handwashing rules. However, the persistent obstacles mentioned in the interviews suggest that school efforts alone are insufficient to ensure long-term behavioral change. To bridge the gap between "knowing" and "doing," future interventions must focus on a synchronized approach between schools and parents. Strengthening education on proper techniques must be coupled with consistent reinforcement across both environments to transform CTPS from a monitored task into a deeply ingrained social norm.

CONCLUSION AND SUGGESTIONS

Based on the research results, pre-test and post-test questionnaire data filled out by first-grade students of SDN 4 Panunggangan, as well as interviews with teachers at SDN 4 Panunggangan, it can be concluded that this research activity has been successful in measuring the level of knowledge and awareness of students regarding the importance of clean handwashing practices and habits with soap. This is indicated by the pre-test and post-test questionnaire data which show an increase in the number of “Yes” answers in all questions. Although students’ knowledge and awareness regarding clean handwashing are quite good, the implementation of handwashing practices shown by the pre-test and post-test and teacher interviews show that many students tend to forget to wash their hands or do not wash their hands thoroughly or are called “playing with water”. This knowledge and awareness need to be instilled and practiced consistently so that a clean lifestyle can be instilled and become a habit for students. This can be raised through supportive environmental factors, and awareness of handwashing behavior with soap (CTPS) that has been instilled in each child. Therefore, further action is needed by increasing the role of the environment around the students, namely, schools, teachers, students' families, peers, and also the children themselves.

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