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# Education on Hand Washing with Soap: A Strategy to Raise Awareness of the Increase in Covid-19 Cases in South Sulawesi

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A R T I C L E I N F O

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A B S T R A C T

Health education in elementary schools is an important strategy in instilling clean and healthy living behaviors (PHBS) from an early age. Handwashing with soap is one of the most effective PHBS practices in preventing infectious diseases, including COVID-19. This study aims to evaluate the effectiveness of handwashing education in improving the knowledge of students participating in the "Little Doctor" (Dokcil) extracurricular program at SDI Banta-Bantaeng I Makassar. This study used a one-group Pretest-Posttest experimental design. The intervention was conducted through interactive lectures and simple practices using a microscope. A total of 28 students participated in the Pretest, received education, and were then re-evaluated with a Posttest. Data analysis was performed using a paired t-test. The average Pretest score was 67.50 and increased to 78.57 on the Posttest. The t-test showed a significant difference between the two scores (p=0.0001), indicating an improvement in students' understanding after the education was provided. Education based on interactive lectures and simple practices was proven effective in improving elementary school students' understanding of the importance of handwashing. It is recommended that similar education be implemented continuously and involve more students to strengthen PHBS behavior in the school environment

## INTRODUCTION

Health education programs in schools are an important strategy for increasing students' awareness and knowledge about the importance of maintaining a healthy lifestyle. Schools play a crucial role in influencing students' health, and the coherence of policies, structures, systems, human resources, and practices will impact students' academic progress (Jourdan et al., 2021). Additionally, referring to the Governor of South Sulawesi's Circular Letter No. 400.7.8/6859/DISKES dated June 2, 2025, regarding heightened vigilance against the rise in COVID-19 cases in South Sulawesi Province, where point 9 emphasizes the "Enhancement of COVID-19 health awareness promotion in the community through the implementation of clean and healthy living behaviors (PHBS), handwashing with running water and soap (CTPS), etc.," ultimately providing strong impetus for the implementation of this handwashing education activity.

The extracurricular activities at SDI Banta-Bantaeng I are one of the approaches to introducing health education from an early age. Although limited to one extracurricular group, these activities have the potential to become a significant educational influence. It aligns with the Indonesian Ministry of Health's (Kemenkes RI) 2024 campaign, "Students in schools are not only beneficiaries but also contributors…." "Students can become peer educators. Here, students educate other students at school or peers in their home environment (child-to-child education)" (Kemenkes, 2024).

Students who are members of the medical club are provided with various materials on healthy lifestyles, perform simple health checks, and sometimes act as medical teams during flag ceremonies at school. As lecturers and students in the field of health, we believe that the potential of students as peer educators and their foundation of knowledge about health can be further enhanced so that the benefits they receive can be more clearly felt.

## LITERATURE REVIEW

`The phenomenon that occurs is that health education programs in schools from an early age are often limited to a single repetitive program, which then passes without further guidance or deeper study, or even without ensuring that students have understood the material. For example, PHBS education is a program that is quite often given to students. Although they have received the material repeatedly, it is not known to what extent students have understood PHBS, and there are no known follow-up plans for the future. At least to reduce conceptual misunderstandings and/or increase the likelihood of students being interested in sharing this education with their peers. We believe that measuring students' understanding levels before and after receiving education is important, given that students' activities are closely related to PHBS, which is a key recommendation from the South Sulawesi Government regarding vigilance against the rise in COVID-19 cases.

## METHODOLOGY

The educational activity focused on proper handwashing techniques using soap. The presentation of the material was conducted using a combination of lecture-style and interactive methods, utilizing PowerPoint presentations. The session was followed by a simple observation using a microscope to examine the effects of handwashing soap on bacteria. The strategic target audience for this activity was the students who are members of the Dokcil extracurricular club at SDI Banta-Bantaeng I Makassar.

This study is an experimental study using a one-group Pretest-Posttest design adapted from the book Health Research Methods (Sugiyono & Puspandhani, 2020). The following details were implemented: Health education was delivered by the instructor; a Pretest was conducted to measure students' initial understanding levels; the material was presented; a simple experiment was conducted under the guidance of the instructor and students a Posttest was administered to assess post-education understanding. The Pretest-Posttest scores collected were subsequently analyzed using IBM SPSS Statistics 25 software.

## RESULTS AND DISCUSSION

The Pretest-Posttest results of the students of the ekskul dokcil SDI Banta-Bantaeng I Makassar, which consists of 28 students who have been collected, are shown in the graph in Figure 1. The data were tested for normality using the Shaphiro-Wilk test. Data distribution can be observed in table 1. We tested the research hypothesis using the Wilcoxon test.

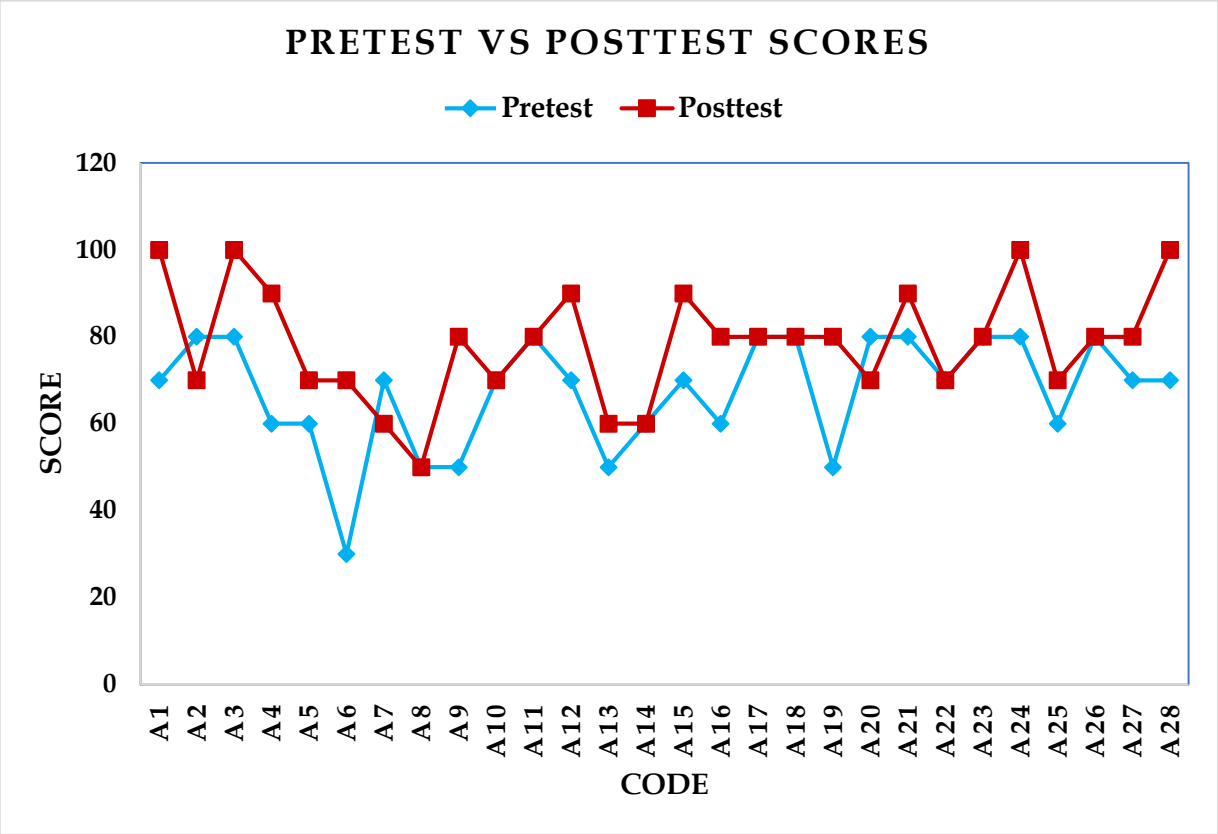


Figure 1. Student Pretest-Posttest scores

Table 1. Data distribution

| | Jumlah data (n) | Min | Max | Mean |
|---|---|---|---|---|
| *Pretest** | 28 | 30 | 80 | 67.50 |
| *Posttest*** | 28 | 50 | 100 | 78.57 |

*Shaphiro-Wilk test (p=0.001), p<0.05; abnormal data
**Shaphiro-Wilk test (p=0.089), p>0.05; normal data
^Wilcoxon test (Asymp. Sig. (2-tailed)=0.001), Asymp. Sig. (2-tailed)<0.05; there is a significant difference between *Pretest* and *Posttest* data.

Based on the pretest and posttest, it was found that students' scores improved significantly after receiving educational intervention. More than half, or around 57%, of students showed an improvement in their scores, further confirming the effectiveness of the intervention. There were 32% of students who did not experience any change in their scores and 11% of students who actually experienced a decline in their scores. This situation suggests the possibility of

individual response variations or external factors influencing test results. The Wilcoxon test results showed a value of 0.001 < 0.05, indicating a significant difference between students' pretest and posttest scores.

The results of this study indicate an increase in the average score of students' understanding after being given education about the importance of washing hands using soap. The average Pretest score of 67.50 increased to 78.57 in the Posttest, with the Wilcoxon test results showing a significance of p = 0.001 (p < 0.05). This shows that the educational intervention is effective in improving students' knowledge. These results are in line with the findings of several recent studies showing that educational interventions that are packaged interactively can improve health literacy in elementary school children (Meherali et al., 2020).

The material delivery method used in this study combined interactive lectures and hands-on observation using microscopes. This visual and practical approach has been shown to be effectively used to increase students' attention and absorption of health materials (Mhlongo et al., 2018). This is also supported by a study by Alamanda (2017), which showed that providing experiential learning can increase concept understanding in elementary school students from 5.16% to 55% better than the lecture method alone (Alamanda, 2017). In addition, Zohrani et al. (2022), have also reported that there is an increase in student learning achievement up to 96% after using experiential learning methods (Zohrani et al., 2022).

However, not all students showed an increase in scores after the intervention. Some students actually experienced a decrease or no change in grades, indicating that there are other factors that contribute to the effectiveness of learning. These factors may include individual concentration, readiness to learn, or even environmental conditions during education. Research by Abzhanova et al. (2025) found that the success of education in schools is strongly influenced by students' intrinsic motivation to learn and the support of a conducive learning environment (Abzhanova et al., 2025).

The involvement of students in extracurricular activities is considered a good initial strategy to foster agents of change in the health sector. As stated in the Kemekes campaign (2024), students have the opportunity to become peer educators, of course with culturally appropriate formulations. The study by Nur and Sudarman (2021) has also reported that the peer group health education method is effective in improving students' knowledge and attitudes regarding personal hygiene compared to conventional methods of counseling and lecture methods (Nur & Sudarman, 2021).

The results of this study show various positive indications. However, the limited scope of the study subjects to extracurricular members of the dokcil is a challenge. Further studies with a more heterogeneous student population are highly recommended to assess the effectiveness of this education in general. In addition, the one-time duration of the intervention is also an important note. Some literature has stated that health education will have more impact if it is carried out periodically and accompanied by behavioral reinforcement (Knisel et al., 2020). Educational activities that involve lecturers and students as facilitators also reflect the synergy between higher education institutions and basic

education. This supports the implementation of the tridharma of higher education, especially community service.

In addition, this activity also answers the recommendations in the South Sulawesi Governor's Circular Letter regarding vigilance against the increase in COVID-19 cases, especially in the point of implementing PHBS. Hand washing with soap is the simplest and most effective step in preventing the transmission of respiratory infectious diseases, including COVID-19, as has been proven in various studies after the pandemic (Gozdzielewska et al., 2022). Therefore, schools are strategic places to shape long-term health behaviors from an early age (Colao et al., 2020).

## CONCLUSION AND RECOMMENDATION

This study proved that handwashing education using interactive lecture methods and simple experiments significantly improved the understanding of student members of the dokcil at SDI Banta-Bantaeng I Makassar. The higher mean Posttest score compared to the Pretest and significant statistical test results indicate the success of the intervention. This method is feasible to be applied in elementary schools, with a note of the need to strengthen the sustainability of the program, expand the target, and regular evaluation so that the benefits of health education can be widespread and sustainable. The involvement of higher education institutions in this activity also strengthens the capacity of basic health education and reflects strategic cross-level collaboration.

## FUTHER STUDY

This research still has delays, so it is necessary to conduct further research related to the topic Education on Hand Washing with Soap: A Strategy to Raise Awareness of the Increase in Covid-19 Cases in South Sulawesi in order to improve this research and add insight for readers.

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