

Education: 6 steps to hand washing for infection prevention in children

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Abstract

Handwashing and toothbrushing habits are part of Clean and Healthy Living Behavior (PHBS) that are effective in preventing infectious diseases in early childhood. However, the implementation of PHBS in schools still faces challenges, such as limited facilities, lack of teacher role models, and children's low level of understanding. This community service activity was carried out at TK PKK Nogosari on August 20, 2025, involving 85 children aged 5–6 years. The methods used included health education, demonstrations, hands-on practice, and pre-test and post-test evaluations. The results showed a significant improvement, where children's understanding of PHBS increased from 44.7% to 84.7%, while their skills in practicing the six steps of handwashing improved from 30.6% to 71.8%. Interactive education through audio-visual media, posters, songs, and hands-on practice proved effective in enhancing children's knowledge and skills in PHBS. Therefore, early habituation of PHBS in schools plays an important role in instilling sustainable healthy behaviors into adulthood.

Keywords: clean and healthy living behavior (PHBS); early childhood; handwashing

1. Introduction

Hands are the part of our body that is most contaminated with dirt and germs. When we hold something or shake hands, germs inevitably stick to the skin of our hands. Worm eggs, viruses, bacteria, and parasites that contaminate our hands will stick to other people when we shake hands with them or even when we eat with unclean hands. The dirt that is swallowed will certainly interfere with digestion (Shabrina et al., 2025).

One way to eliminate germs and prevent the spread of disease is to wash your hands with soap. Washing your hands with soap is a form of sanitation that involves cleaning your hands and fingers with water and soap to remove germs and break the chain of infection. (Dwi Lutviana Sari et al., 2024). Washing your hands with soap in the right way is the easiest and most effective way to prevent disease. Washing your hands with water and soap can more effectively remove dirt and dust mechanically from the surface of the skin and significantly reduce the number of disease-causing microorganisms, such as viruses, bacteria, and other parasites, on both hands. Washing hands with water and soap can more effectively clean dirt and worm eggs that stick to the skin surface, nails, and fingers on both hands (Sukiyaningsih et al., 2024).

Instilling clean and healthy living habits in kindergarten can be done through fun play and learning activities, thereby engaging children and getting them involved in these activities. (Dewi Pane et al., 2022). Click or tap here to enter text. Kindergarten schools are strategic targets for instilling positive values in early childhood, as well as introducing and familiarizing students, families, and communities with clean and healthy living behaviors. (Husni et al., 2024). Clean and Healthy Living Behaviors (PHBS) are simple yet effective measures in preventing infectious diseases in early childhood. The consistent practice of washing hands with soap and brushing teeth has been proven to reduce the risk of infectious diseases, such as diarrhea and acute respiratory infections (ARI) (Salam & Masyarakat, 2024). Therefore,

it is important to instill healthy habits from an early age using educational approaches that are appropriate for the child's stage of development (Oktapia et al., 2023).

In reality, the implementation of PHBS in schools still faces various obstacles. From a health perspective, the prevalence of dental caries among children remains high, and the habit of washing hands properly is not yet optimal. (Fankari et al., 2023). In terms of infrastructure, the limited availability of clean water, soap, and hand washing facilities is an obstacle. Meanwhile, socio-cultural factors such as the lack of role models from parents and teachers also contribute to the low sustainability of PHBS practices (Oktapia et al., 2023).

These common problems were also evident at the service location, where there were still various obstacles in implementing PHBS among early childhood. Many children did not have the habit of washing their hands with soap before and after meals; some even only rinsed their hands with water without using soap (Syarifnur, 2024). The number and condition of handwashing facilities in schools mean that children have to wait their turn, so they are often in a hurry and do not wash their hands properly (Hasibuan et al., 2023). Educational media on the six steps of handwashing is also very limited, so children's understanding is limited to brief knowledge without truly understanding the importance of this habit (Fitriana et al., 2023) In terms of guidance, teachers have tried to provide direction, but they have not been consistent in setting an example by washing their hands before eating or after activities (Taufiq et al., 2025). This causes children to be less motivated to make it a daily habit (Salu et al., 2025). This situation has the potential to increase vulnerability to infectious diseases, particularly diarrhea and respiratory tract infections, which are still commonly found in children both at school and at home (Kunang & Puspariny, 2025).

In fact, teachers play an important role in shaping healthy habits through example and guidance, while students have the potential to become agents of change who bring PHBS practices to their families and communities (Emma Mallisa et al., 2025). Research shows that teacher involvement and student enthusiasm in hands-on practice contribute significantly to the successful implementation of PHBS (Wulandari et al., 2023). On the other hand, schools actually have great potential to support the strengthening of PHBS through the role of teachers, health workers, and the use of simple educational media such as posters, songs, games, and practical demonstrations (Shabrina et al., 2025). Therefore, this activity is designed to raise awareness and improve the skills of early childhood in applying the six steps of proper hand washing as part of the PHBS habit formation in schools.

2. Method

This community service activity was held at the Nogosari PKK Kindergarten, Nogosari 1 Hamlet, on August 20, 2025, with 80 participants aged 5-6 years old. The program focused on instilling Clean and Healthy Living Behaviors (PHBS), particularly the practices of brushing teeth and washing hands properly. The methods used were as follows:

2.1. Health education

Activities planned to convey messages or information about health to individuals or groups with the aim of improving knowledge, perspectives, and healthier behaviors (Aids et al., 2023).

2.2. Demonstration

The demonstration method is a technique used by educators to convey material to students with verbal explanations accompanied by direct demonstrations. In its application, teachers can use real or imitation tools and involve students during the learning process. Through this method, students' understanding of the material will be more in-depth because of the demonstrations that clarify the explanations. In addition, the use of props and visual media makes it easier for students to understand the content of the lessons (Husain & Wardana, 2021).

2.3. Direct practice (re-demonstration)

The involvement of participants in applying skills and habits through actions or behaviors that have been demonstrated previously (Tengah, 2025).

2.4. Simple evaluation

A pre-test and post-test evaluation method given to participants. The pre-test consists of a set of initial questions given to participants with the aim of determining their initial conditions, initial information, and basic level of understanding of the training material to be provided. After the activity ends, the service team also prepares a set of questions for participants to answer (Amijaya & Dewangga, 2025).

The activity began with a brief presentation, a video screening, and singing PHBS songs. Next, the children participated in a simple question and answer session and practiced brushing their teeth and washing their hands with the assistance of teachers and KKN students. This strategy is expected to improve children's understanding and encourage them to apply PHBS in their daily lives.

3. Results and Discussion

This community service activity began with the arrival of KKN students at the Nogosari PKK Kindergarten on Wednesday, August 20, 2025, at 7:30 a.m. Upon arrival at the location, the students were welcomed by teachers and children, and the event began with morning exercises together. The exercises were conducted in the school yard and were enthusiastically participated in by all PKK Nogosari Kindergarten students and teachers. Through this activity, the atmosphere became more relaxed, the children looked excited, and the relationship between the students, teachers, and children became closer. After the exercise session was over, the children were directed to their respective classrooms to continue with the next activity.

The main activity involved all students from four classes, namely A1, A2, B1, and B2. However, it was centered in class B2 because the classroom was more spacious and could comfortably accommodate all participants. The target number for this activity was 85 PKK Nogosari kindergarten children aged 5-6 years. Before starting the material, the KKN students introduced themselves first so that the children would get to know who would be accompanying them in the learning activities, as well as to build emotional closeness so that the learning atmosphere would be warmer and more enjoyable.

Next, the students showed an educational video from YouTube that demonstrated how to wash hands and brush teeth properly. The video was chosen because it presented attractive visuals that were easy for young children to understand. With this audiovisual media, children are expected to be more interested, focused, and able to easily remember the steps shown. To prevent children from getting bored, ice breaking activities in the form of simple games and interactive songs were inserted in the middle of the activity. These ice breaking activities were designed to rekindle children's enthusiasm for learning, restore their concentration, and create a more enjoyable classroom atmosphere. In this way, the children remained enthusiastic about participating in the activity until it was over.

After that, the children are given the opportunity to directly practice brushing their teeth and washing their hands according to the instructions that have been explained. At this stage, the students actively assist by providing guidance, real examples, and corrections if there are any steps that are not quite right. Teachers also play a role by setting an example, such as demonstrating the steps for washing hands again, and supporting the children to be more confident in trying. The collaboration between students and teachers made the learning atmosphere more enjoyable and effective, as the children saw firsthand that their teachers also practiced clean living behaviors.

As a form of reinforcement, the children were then asked to try washing their hands and brushing their teeth independently without direct assistance from students or teachers. The aim was for them to become accustomed to performing these activities correctly in their daily lives. Through this independent practice, it is hoped that independence will grow and healthy habits will be formed from an early age. The children's enthusiasm was evident when the material was presented using posters, educational songs, and animated videos. This is in line with the learning characteristics of early childhood, where concepts are more easily understood through audio-visual media (Shabrina et al., 2025). [Click or tap here to enter text.](#)

A pre-test was conducted before the educational activities began, both for hand washing and tooth brushing. The pre-test was conducted by asking the children simple oral questions, such as "When washing your hands, what is the first thing we take, children?" or "When brushing your teeth, what is the first step?" The questions were asked in stages according to the sequence of steps, so that the extent of the children's understanding of the correct procedure could be seen. In addition, the children were also asked to practice washing their hands and brushing their teeth according to their daily habits without prior instruction. The results of the observation showed that most of the children did not fully understand the

correct steps, for example, only wetting their hands without soap or brushing their teeth hurriedly without paying attention to the entire surface of their teeth.

After receiving education through short lectures, video presentations, and hands-on guidance, a post-test was conducted with similar questions and practice sessions. The results showed a significant improvement in both understanding and skills. The children were able to answer questions step by step more accurately and imitate the six steps of hand washing and tooth brushing as instructed. This proves that the combined education method used is effective in improving clean living habits in early childhood (Risna et al., 2024).

To clarify the evaluation results, pre-test and post-test data on children's understanding and skills in handwashing and toothbrushing are presented in graph form. This graph illustrates a significant improvement after the educational activities were conducted, both in terms of knowledge and children's hands-on practice.

Table 1. Pre-test and Post-test Results on Understanding and children's skills

Category	Pre-test (n,%)	Post-test (n,%)
Understanding	38 (44,7%)	72 (84,7%)
Not Understanding	47 (55,3%)	13 (15,3%)

Table 2. 6 steps to washing your hands

Category	Pre-test (n,%)	Post-test (n,%)
Ability	26 (30,6%)	61 (71,8%)
Inability	59 (69,4%)	24 (28,2%)

The results of Table 1 show a significant increase in both children's understanding and skills. Understanding of the importance of handwashing increased by 40 percentage points, from 44.7% in the pre-test to 84.7% in the post-test. Meanwhile, children's skills in practicing the six steps of hand washing increased by 41.2 percentage points, from 30.6% to 71.8%.

Based on these results, hand washing and tooth brushing education can be declared successful in changing children's skills. Furthermore, the results of these actions need to be followed up with habituation in daily life at home. Habituation from an early age is very important because both are clean and healthy living behaviors (PHBS) that are effective in preventing various infectious diseases. The habit of washing hands with soap has also been proven to reduce the risk of diarrhea by up to 50% and acute respiratory infections (ARI) by around 25%, while regular tooth brushing prevents tooth decay, which remains a major health problem in children (Nurhayati et al., 2022). Interactive educational methods, such as songs, posters, videos, and hands-on practice, have been shown to significantly improve children's understanding and skills (Risna et al., 2024). In addition to preventing disease, early hygiene education also shapes healthy habits that continue into adulthood and fosters children's independence and self-confidence. Therefore, providing education on hand washing and tooth brushing in schools is a strategic step toward instilling healthy habits, reducing vulnerability to disease, and creating a healthier generation in the future.

4. Conclusion

The Clean and Healthy Lifestyle (PHBS) educational activity through the practice of six steps of hand washing at the Nogosari PKK Kindergarten proved to be effective in improving the understanding and skills of early childhood. The pre-test results showed that the children's understanding was still low (45%) and their practical skills were only 30%, but after the intervention there was a significant increase to 85% for understanding and 72% for skills. This proves that a combination of short lectures, the use of audio-visual media, and hands-on practice can improve the PHBS behavior of 5-6 year old children. The success of this activity was supported by the enthusiasm of the children, the role of teachers as mentors and role models, the collaboration of KKN students in the practice, and the use of interactive media appropriate for early childhood characteristics. However, this activity still faces obstacles in the form of limited handwashing facilities, differences in children's abilities to follow the steps, and a lack of habit formation in the family environment, which affects the sustainability of healthy behavior outside of school.

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