RAISING STUDENT HEALTH VIA WHO'S 6-STEP HYGIENE DURING KKN PROGRAM IN PAYARAMAN DISTRICT SOUTH SUMATRA

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Disubmit: 03 Maret 2025 Diterima: 09 Juni 2025 Diterbitkan: 01 Juli 2025
Doi: https://doi.org/10.33024/jkpm.v8i7.19894

ABSTRACT

The 63rd KKN program at Universitas Muhammadiyah Palembang involved medical students in community service, focusing on raising awareness and practice of the WHO 6-step handwashing method to prevent infections and promote nutritional health. This study aimed to evaluate the effectiveness of community education on proper handwashing techniques among elementary students. The outreach program included preparation, implementation, and evaluation phases, with educational materials, school visits, counseling, demonstrations, and hands-on practice. A total of 43 students SDN 6 participated, showing significant improvements in knowledge and behavior. At SDN 1, MIN 1 Payaraman and KKN Posko, educational activities and WHO handwashing initiatives were implemented; however, no pre-tests or post-tests were administered. The six-step handwashing education and the automatic hand soap dispenser effectively enhanced students' knowledge and enthusiasm for cleanliness through handwashing at UPT SPD N 06. To maintain this program, the school should implement frequent educational sessions and guarantee the provision of adequate clean water inside the school premises.

Keywords: 6-Step Handwashing WHO; Automatic Foam Soap Dispenser, Behavior Change, Elementary School Students, KKN Program

1. INTRODUCTION

The health of children—physical, nutritional, and psychological—deteriorates significantly in schools when clean and healthy living habits (PHBS) are not imparted. Poor access to clean water and adequate sanitation facilities is associated with many forms of malnutrition, such as stunting and dehydration, which can negatively impact children's cognitive functions (Amoadu et al., 2024; Sangalang et al., 2022). Inadequate understanding of personal and environmental hygiene raises the risk of communicable diseases like as *diarrhea* and acute respiratory infections, which not only result in severe absenteeism but may also spread to others (Assefa & Kumie, 2014; Minda et al., 2024). Poor dental hygiene correlates with diminished quality of life and academic performance in children, while an unsupportive school

environment may also lead to eyesight impairments and physical disabilities (Das et al., 2023). Furthermore, insufficient sanitation might result in adverse health circumstances that exacerbate stress, behavioral issues, and mental health disorders (Hacımustafaoğlu, 2020). The COVID-19 pandemic has consequently exacerbated fundamental interventions focused on hygiene education and the establishment of water, sanitation, and hygiene (WaSH) facilities in educational institutions (Carducci et al., 2024)

Inappropriate food hygiene awareness leads to nutritional deficits that increase the risk of foodborne diseases and school absenteeism even more. Moreover, inadequate health education promotes harmful lifestyle choices including physical inactivity and poor diet, which results in obesity and chronic diseases such diabetes (Perekusihin et al., 2020; Tammelin et al., 2017). This emphasizes the need of organized nutritional education programs (Miguel-Berges et al., 2024; Yamgai et al., 2022). Furthermore, bad health influence's cognitive ability and academic achievement; on the other hand, well-organized health interventions increase motivation and learning results (Golsteyn et al., 2020; Suleymanova & Bashirova, 2018). Improving children's physical health and academic performance depends on closing these gaps by means of integrated wellness strategies, upgraded WaSH facilities, and thorough school-based health education programs.

2. PURPOSES

At the 63rd KKN (Real Work Lecture) program at Universitas Muhammadiyah Palembang, medical students engaged in activities that were geared toward community service. The activities were implemented from January 23 to March 8, 2025. Posko 5-7-14-42 is the group of KKN students who have been assigned to four out of ten villages in the Payaraman District, which is located in the Ogan Ilir Registration District. One of the goals of this initiative is to raise awareness and practice 6-step-WHO, which will ultimately prevent infection and promote optimal nutritional health. A pre-test and a post-test were administered to the individuals who took part in the event in order to ascertain the extent to which community education and counseling had an effect on the participants' level of knowledge.

Figure 1. depicts a Google Maps map of the event site. The distance between the office of Faculty of Medicine Universitas Muhammadiyah Palembang and Payaraman District, Ogan Ilir Regency, South Sumatra is 66 kilometers.

3. LITERATURE REVIEW

The implementation of clean and healthy living behavior (PHBS) in educational institutions is significantly shaped by behavioral change theories, health promotion frameworks, and ecological viewpoints. Behavioral change theory asserts that health enhancements arise from altering detrimental behaviors via education and awareness, utilizing tactics such as lectures, visual aids, and audiovisual media to augment students' comprehension and motivation to embrace PHBS (Abdurrahman & Trisnawati, 2024; Nasiatin et al., 2021; Veronica Purba et al., 2020). Health Promotion Models emphasize the efficacy of utilizing media such as films, posters, and story cards to enhance students' knowledge and attitudes, while initiatives like school health clinics and health awareness campaigns act as vital supports in cultivating enduring clean and healthy living practices (Moussi et al., 2024; Veronica Purba et al., 2020). The ecological model emphasizes the significance of the school environment, encompassing infrastructure and institutional policies, in influencing student behavior, hence necessitating effective management and implementation of these elements for success (Harahap et al., 2018). Outside the educational environment, the significant of parents and teachers is crucial in promoting PHBS, as children's hygiene behaviors are greatly shaped by the support and direction they have at home and in school (Nasiatin et al., 2021).

The key question motivating this program is: to what extent can structured health education and school-based support systems increase students' adoption of hygienic and healthful practices, specifically effective handwashing techniques?

4. METHOD

The health outreach was executed in three phases: preparation, implementation, and evaluation, to ensure its efficacy in raising awareness and fostering clean and healthy living practices among students.

In the Preparation Phase, there are 4 teams concentrated on creating teaching materials that highlighted the significance of clean water and the right six-step handwashing process in accordance with WHO regulations. To guarantee an interesting and successful learning experience, diverse interactive pedagogical methods were developed, integrating visual demonstrations and student-centered participatory activities. Moreover, vital supplies including automatic foam soap dispenser, potable water, and educational materials were meticulously organized. Collaboration was developed with UPT SPD N 06 Payaraman, SD N 01 Payaraman, and MIN 1 Payaraman, to facilitate seamless implementation and assistance from the schools.

During the Implementation Stage, the team visited those schools to perform interactive outreach sessions, the proper handwashing techniques. The team illustrated both the theoretical advantages of cleanliness also demonstrating the six-step WHO procedure in practice. This technique was applied by 21 and 22 students in Class III A and 22 III B at UPT SPD N 06 Payaraman, respectively (figure 2), as well as 30 and 30 students in Class II A and III A at SD N 01 Payaraman, respectively (figure 3). The above method was implemented with 30 students in Class IV A at MIN 1 Payaraman, (figure 6), as well as 12 students in KKN Posko (figure 7). The inclusion criteria encompassed students from Grades II to IV enrolled in the partner primary

schools (UPT SPD N 06 Payaraman, SDN 01 Payaraman, and MIN 1 Payaraman), classroom educators who were enthusiastic about implementing and evaluating the handwashing practice, as well as members of the KKN Posko group who actively participated in the educational activities. All participants were expected to engage fully in the entire sequence of events, from the outreach sessions to the evaluation phase. Conversely, exclusion criteria applied to students or educators who were absent during the outreach or hands-on sessions, students with medical conditions that impaired hand mobility or limited participation in interactive tasks, and individuals who either did not provide consent or chose to withdraw at any point during the activities.

In the Evaluation Stage, only one team manage to monitored students' (figure 4) and teacher (figure 5) implementation of the handwashing method to verify correct practice. Their understanding was subsequently evaluated through a question-and-answer session, also also the reflections interviews facilitated the identification of areas for enhancement in future outreach initiatives.

5. RESULTS AND DISCUSSION

The findings of this community service initiative showed that implementing organised hand hygiene education significantly improved students' knowledge and enthusiasm for hygienic practices. In the training session, none of the students in class III A were familiar with the 6-step handwashing procedure, whereas around 5 students in class III B were knowledgeable about it. Following to the outreach and instruction on the six-step handwashing technique in both classes, it was determined that students' understanding of handwashing had enhanced. All students in grades IIIA and IIIB now comprehend the significance of clean water and the six steps of handwashing. This was apparent during the Q&A session after the presentation, when all students eagerly answered the author's inquiries, and four students exhibited the six handwashing steps in front of the class.

Figure 2. Students at Payaraman Elementary School VI had been advocated for health awareness using audio-video aids. Before practice, each student received instruction on the WHO's six-step technique. Link video: https://youtu.be/POp73I2sN5w?feature=shared

Figure 3. Students instructed visuals to demonstrate WHO's six-step handwashing practice. On February 4, 2025; 60 Payaraman Elementary School I class II A and II B students have participated. Link video: https://youtube.com/shorts/30BvT-qJbh8?feature=shared

This finding is directly relevant to the basic question of the usefulness of formal health education in promoting PHBS among primary schoolchildren. The later interview included six children from UPT SPD N 06 Payaraman, covering grades 3 to 6. The inquiries pertained to their experiences with automated hand soap, comfort levels, and comprehension of the significance of handwashing. The teacher indicated that the automatic hand soap dispenser enhances students' enthusiasm for cleanliness through handwashing. The uniqueness of the device fascinates the students, prompting them to eagerly wash their hands, particularly before and after meals. They acknowledge the tangible benefits of employing this tool.

Figure 4. Elementary school VI students now wash their hands routinly. She presses her palm under the sensor to wait for foaming soap. Other students wait behind her enthusiasticly.

This program is consistent with previous research, including studies, which show that health treatments are most effective when they use experiential learning strategies such as audiovisual media and peer

interaction. In SDN 1, MIN 1 Payaraman and KKN Posko, where educational activities and WHO handwashing were implemented without pre- and post-tests, quantitatively assessing the effectiveness of the intervention poses challenges. In the absence of official evaluations, it is acceptable to assert that the instructional sessions and WHO 6-step handwashing protocol contributed to heightened awareness and perhaps influenced behavior, despite the lack of rigorous evaluation of these outcomes (Ayu et al., 2022; Bahrah & Wigunarti, 2022; Darwis et al., 2022; Febriawati et al., 2023; Silalahi & Silaban, 2025; Wardani et al., 2023; Wigunarti et al., 2022).

Figure 5. The SD VI teacher utilized an automatic foam soap dispenser to cleanse her hands. The instructor observes her to check that she is washing her hands properly.

Figure 6. Students were presented with visual instructions and practice. The event occurred on February 17, 2025, with thirty pupils from Payaraman MIN School's class IV A in attendance. Link video: https://youtu.be/hsWPVzzHB9A? feature=shared

However, challenges of the establishment of clean and healthy living habits in schools frequently faces obstacles due to inadequate infrastructure, a lack of sufficient teacher involvement, and ineffective institutional policies, which restrict the overall effectiveness of health education programs (Wardani et al., 2023). The absence of integration between these interventions and the current school curriculum significantly

diminishes their effectiveness (Anthonj et al., 2021). Research shows that well-structured health education effectively improves students' knowledge and attitudes, especially when implemented through various methods like films, booklets, and peer education (Veronica Purba et al., 2020). Furthermore, behavioral changes become more evident when programs include practical components such as school health clinics and peer-led initiatives, highlighting the significance of experiential learning in maintaining long-term health habits (Fakhrurozi et al., 2024). It is essential to tackle these structural and pedagogical barriers to enhance the effectiveness of school-based health education and to ensure that advancements in student knowledge led to lasting behavioral change. Nonetheless, despite these advances, various structural impediments, such as inadequate infrastructure and insufficient alignment with the educational curriculum, correspond to the concerns expressed by Wardani et al. (2023) and Anthonj et al. (2021), indicating that institutional and policy deficiencies jeopardise the long-term viability of such programs. As a result, synthesising these data emphasises the importance of holistic solutions that provide engaging educational content while strengthening school structures and actively involve teachers and administrators in order to promote an atmosphere favourable to long-term behavioural change.

Figure 7. Students of KKN delivered instruction on the six-step handwashing technique as per WHO guidelines at the posko KKN on January 31, 2025. Link video: https://youtu.be/VI-EizPibL8?feature=shared

6. CONCLUSION

The six-step handwashing education and the automatic hand soap dispenser effectively enhanced students' knowledge and enthusiasm for cleanliness through handwashing at UPT SPD N 06. Future programs and research should look into scalable interventions in educational settings, how to sustain hygiene compliance, and how to involve families and communities in encouraging health behaviours outside of the school setting.

Acknowledgement:

We would like to express deep appreciation to Universitas Muhammadiyah Palembang for the financial support provided by the PKM-KKN LPPM grant 2025, and also to SDN 1, SDN 6, and MIN 1 Payaraman District

for accommodating the schedule needed to successfully carrying out this instructional effort.

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