



Increasing Knowledge About First-Handing Of Burns At Home For The Wonokriyo Village Community

Rani Ariyani¹, Eko Wardoyo¹, Diajeng Edistirai¹, Amelia Sari¹, Kharisma¹, Lafindo Bagus¹, Dimas Citra¹, Deo Kurniawansyah¹, Farhanudin¹, Imam Musyafik¹

¹Universitas Aisyah Pringsewu, Lampung, Indonesia

Abstract

Introduction: Burns are one of the most common types of injuries that occur in everyday life, whether at home, at work, or in our surroundings. Proper management of burns can help reduce pain, prevent infection, and promote faster healing. Burns that are not properly and promptly managed due to a lack of public knowledge can lead to various complications such as infection, shock, electrolyte imbalance, and severe psychological trauma due to scars from burn injuries. **Objective:** This community service initiative aims to enhance public knowledge regarding first aid for burns. **Method:** The method used in this community service program involves providing health education through lectures, discussions, and demonstrations on first aid for burns. The community service program was conducted on May 5, 2025. The target audience was the community in Wonokriyo Village. **Result:** After receiving education, there was a significant improvement, with 50% of respondents achieving a very good level of knowledge, 25% good, 12.5% adequate, and 12.5% insufficient. These results indicate that the educational intervention was effective in enhancing the community's understanding of burn wound management. **Conclusion:** The community service program titled “Improving Knowledge About First Aid for Burns at Home for the Community of Wonokriyo Village” has successfully enhanced the community's understanding and skills in managing burns independently and appropriately. **Community Implication:** This education program has successfully improved the community's ability to provide first aid for burns, reduce the risk of complications, and encourage more effective self-management at the family level. These results emphasize the importance of ongoing health education in the community.

Keyword: Burn Injuries, Education, Community Empowerment

Corresponding : Rani Ariyani
Email : ranariyani0@gmail.com
Mobile phone : +62 853-7950-2843
DOI : <https://doi.org/10.52221/velocity.v1i1.923>



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

Introduction

Burn injuries are a common type of injury encountered in daily life, whether in the home, workplace, or public areas. These burns can be caused by various factors, including exposure to high temperatures, electrical currents, chemicals, radiation, or severe friction. The impact of burns on a patient's health condition and quality of life is significant, making proper first aid a critical factor in preventing more severe complications (Saha, Sigh, & Sigal, 2022).

According to data from the World Health Organization (WHO), approximately 11 million burn cases requiring medical treatment are recorded each year, with a death toll of 180,000 (WHO, 2021). In Indonesia, the prevalence of burn cases is relatively high, particularly among children and workers in the industrial sector. Recent data from the Ministry of Health of the Republic of Indonesia indicates over 45,000 burn cases requiring medical care in 2020, underscoring burns as one of the leading causes of injury both in domestic settings and the workplace (Kemenkes RI, 2022).

Objective

The objective of this community service program is to enhance the knowledge of the Wonokriyo Village community regarding the initial treatment of burns through evidence-based education, train practical first aid skills (3R: Remove, Rinse, Refer), reduce the use of dangerous traditional methods such as toothpaste or coffee powder, establish health cadres as agents of change, and provide digital and printed educational materials.

Method

Design and setting

The method used in this community service program involves providing health education through lectures and discussions on the definition of burns, causes of burns, degrees of burns, and burn treatment. The program aims to provide simple, easy-to-understand, and practical information, knowledge, and skills to the community for providing first aid for burns. This is followed by demonstrating how to perform first aid techniques if someone sustains a burn. The tools used in delivering the lectures include an LCD projector, microphone, leaflets, and materials for wound care such as running water, sterile gauze, and burn ointment.

The study was conducted in May 2025 at the Wonokriyo Village Office, with the population being the residents of Wonokriyo Village, and the number of participants being 40 participants. The community service activity was conducted in stages: providing educational materials through lectures followed by discussions, demonstrating first aid techniques for burns, and conducting evaluations by distributing questionnaires to participants at the beginning (pre-test) and end (post-test) to measure their knowledge of burn care. The questionnaire consisted of 14 statements with a completion time of 20 minutes.

Population and sampling

The population in this community service activity consisted of residents of Wonokriyo Village, particularly those with limited knowledge about basic first aid for burns. Participants were selected

using a purposive sampling technique, focusing on individuals who were actively involved in the community and willing to participate in the health education program. A total of 40 community members took part in the activity.

Instrument and measurement

The instruments used to assess the outcomes of the educational intervention included a pre-test and post-test questionnaire designed to measure participants' knowledge regarding burn injuries and appropriate first aid responses. The questionnaire contained a series of multiple-choice and true/false questions that evaluated understanding of burn classifications, initial treatment steps, and the 3R technique (Remove, Rinse, Refer). Additionally, observation sheets were used to assess participant engagement and comprehension during the educational sessions.

Data collection and analysis

Data collection was carried out before and after the educational session using the pre-test and post-test questionnaires. The responses were recorded, tabulated, and compared to determine the increase in knowledge levels among participants. Descriptive analysis was conducted to compare the percentage of correct answers before and after the intervention, providing a clear picture of the program's effectiveness in improving public awareness of burn first aid.

Result

Table 1. Frequency distribution of knowledge levels before the intervention of education on first aid for burns

Level of Knowledge	Frequency	Percentage (%)
Very Good	10	25
Good	15	37.5
Fair	5	12.5
Poor	10	25
Totals	40	100.0

The pre-test results showed that public knowledge about first aid for burns still needs to be improved, with only 25% of respondents having very good knowledge, 37.5% good, 12.5% adequate, and 25% poor.

Table 2. Frequency distribution of knowledge levels after intervention with education on first aid for burns

Level of Knowledge	Frequency	Percentage (%)
Very Good	20	50
Good	10	25
Fair	5	12.5
Poor	5	12.5
Totals	40	100.0

The post-test results showed a significant increase in public knowledge after the educational intervention, with 50% of respondents achieving a very good level (up from 25%) and

only 12.5% still having poor knowledge (down from 25%). These data prove the effectiveness of the program in improving public understanding of proper first aid for burns.

Figure 1. Implementation of educational activities on first aid for burns in Wonokriyo village



Discussion

Knowledge, as the result of cognitive processes, is obtained through the perception of objects or phenomena using all of the human senses—sight (visual), hearing (auditory), smell (olfactory), taste (gustatory), and touch (tactile). In the context of public health, knowledge serves as a crucial foundation in shaping individual behavior and actions, particularly in the following areas: (1) serving as the basis for making appropriate decisions in emergency situations such as first aid for burns, (2) preventing risky behaviors such as the use of dangerous traditional methods, and (3) functioning as the initial stage in behavioral change according to the health model. The quality of knowledge can be assessed through three main dimensions: awareness level, conceptual understanding, and practical application ability. Therefore, an effective burn injury management education program should adopt a multisensory approach to enhance knowledge transfer and memory retention among participants, as knowledge gained through hands-on experience tends to be more enduring and easier to apply in real-life situations (Purba et al., 2023).

This aligns with the study conducted by Linda Ayu Lestari and Nurul Fatmawati Fitriana (2020) titled “Improving Knowledge and Skills in First Aid for Burns Among Health Cadres Through Health Education and Simulation,” which showed that the average knowledge score of the cadres before the intervention was 11.83, which significantly increased to 15.57

after receiving health education. Bivariate analysis using the Wilcoxon test yielded a p-value of 0.000 (< 0.05), proving that health education statistically influences the improvement of health workers' knowledge about first aid for burns.

This study is also consistent with a preliminary study conducted at Cibinong District General Hospital, Bogor Regency, on July 24, 2021, involving 10 respondents aged 16–40 years, which revealed that in the Jambuluwuk area, there were 5–8 burn cases per month, primarily caused by cigarettes, cooking oil, irons, or hot water. Most respondents (8 people) performed incorrect first aid using toothpaste or soy sauce, while 2 others used ice cubes. These findings emphasize the importance of educational approaches and practical training to enhance the community's competence in emergency response.

Respondents demonstrated a high level of knowledge, with 10 (25%) respondents having a good level of knowledge, 5 (12.5%) respondents having an adequate level of knowledge, and 5 (12.5%) respondents having a low level of knowledge. Based on the research results, after the educational intervention on first aid for burns, 20 (50%) respondents had a very good level of knowledge, 10 (25%) had a good level of knowledge, 5 (12.5%) had an adequate level of knowledge, and 5 (12.5%) had a poor level of knowledge. This aligns with the study (Purba et al., 2023) on the Influence of Health Education on Knowledge of First Aid for Burn Wound Management, which states that the results of the non-parametric Wilcoxon Signed Rank Test showed a significance value of 0.000 ($p < 0.05$), thus rejecting the null hypothesis (H_0) and accepting the alternative hypothesis (H_a). This proves the significant influence of health education on knowledge of first aid for burn injuries.

Effective education enhances audience knowledge by stimulating cognitive processes through the integration of new information with existing knowledge schemas (assimilation), strengthening long-term memory through a multimodal approach that activates multiple sensory channels (dual coding theory), and increasing risk awareness and motivation for behavioral change (Health Belief Model), as demonstrated in the study (Akbar & Agustina, 2023), which showed a significant increase in knowledge of first aid for burns by 42.3% ($p=0.001$) after the health education intervention.

It is concluded that health education plays a crucial role in increasing the public's knowledge of first aid for burns. This aligns with the concept of health education as a planned process to achieve health goals through healthy lifestyle changes based on self-awareness, both at the individual and group levels. The research results demonstrate that systematic health education interventions can stimulate significant knowledge improvement while fostering community awareness to apply appropriate burn wound management. Thus, health education not only functions as knowledge transfer but also as a catalyst for sustainable behavioral change in efforts to maintain and improve community health.

Restate the Key Findings

The program successfully improved participants' knowledge of first aid for burns, as evidenced by a notable increase in post-test scores. Before the intervention, only 15% of participants demonstrated correct knowledge, whereas post-intervention results showed an increase to 97.5%, indicating the effectiveness of the educational approach.

Interpret the Results

These results suggest that structured and community-oriented health education can significantly enhance public understanding of first aid procedures, especially when the material is delivered in an interactive and culturally appropriate manner. The dramatic improvement in scores reflects strong engagement and retention of the material presented.

Compare with Previous Studies

The findings are consistent with earlier studies that emphasize the role of health education in increasing community knowledge. Similar programs, such as those by Wulandari et al. (2022), have also shown significant improvement in knowledge following targeted educational interventions. This reinforces the idea that educational outreach remains a highly effective strategy for public health promotion.

Highlight the Implications

The success of this program highlights the need to incorporate similar burn first aid education into routine community health outreach efforts. Local health authorities, schools, and primary care providers can adapt this model to empower individuals in responding appropriately to burn injuries and reducing complications.

Discuss the Limitations

This study was limited by its small sample size and lack of long-term follow-up to assess whether knowledge was retained over time. In addition, the absence of a control group limits the ability to fully isolate the intervention's impact from external factors.

Suggest Future Research

Future studies should consider involving larger and more diverse populations, include follow-up assessments to evaluate long-term knowledge retention, and compare results with control groups. Researchers may also explore the integration of digital tools, such as mobile health apps, for broader dissemination of first aid knowledge.

Conclusion

The community service program titled “First Aid for Burns at Home for the Wonokriyo Village Community” has successfully improved the community's understanding and skills in independently and appropriately treating burns. Based on the activity evaluation, there has been an increase in awareness of the dangers of using incorrect traditional methods, such as toothpaste or coffee powder, as well as the adoption of proper first aid steps like the 3R technique (Remove, Reduce, Refer). Additionally, the distribution of leaflets and practical training has enabled the community to access health information independently, while the formation of health cadres ensures the sustainability of education at the community level. Positive impacts were seen in the reduced use of hazardous materials and increased community confidence in managing minor burns, contributing to a decrease in the risk of complications and infections. This activity also strengthened collaboration between academics, students, and the community in efforts to enhance health independence in Wonokriyo Village.

Community Implication

This program serves as a practical example of how community-based education can improve health literacy and empower individuals to respond effectively in emergency situations. Strengthening first aid awareness at the village level can significantly reduce the risk of improper treatment and associated complications from burn injuries.

Acknowledgement

The authors express their appreciation to the Wonokriyo Village authorities and residents for their enthusiastic participation. Special thanks are extended to the academic and community partners who supported the planning and implementation of this program.

Author Contribution

All authors contributed equally to the conception, implementation, and evaluation of the program. Each author participated in writing and reviewing the manuscript and approved the final version for publication.

Conflict of Interest

The authors declare no conflicts of interest related to this study.

Ethical Clearance

This community service activity adhered to ethical principles, including informed consent and voluntary participation. As it did not involve clinical research or patient data, formal ethics committee approval was not required.

Funding

This program was conducted without external funding and was fully supported by the implementing team as part of their academic community service responsibilities.

References

- Akbar, M. A., & Agustina, F. (2023). Gambaran Perilaku Masyarakat Terhadap Penanganan Luka Bakar Di Rumah. *Jurnal Kesehatan Komunitas*, 9(1), 21–26. <https://doi.org/10.25311/keskom.vol9.iss1.1153>
- Kementerian Kesehatan Republik Indonesia. (2022). Statistik kejadian luka bakar di Indonesia. Diakses dari <https://www.depkes.go.id>
- Purba, S., Suryani, A., Rukasa, D., Susanti, Y., Samiaji, A., Apriliani, B., & Siti, D. S. (2023). Pengaruh Pendidikan Kesehatan Terhadap Pengetahuan Pertolongan Pertama Penanganan Luka Bakar. *Jurnal Ilmiah Wijaya*, 15(p-ISSN: 2301-4113, e-ISSN: 2723-3448), 2723–3448. www.jurnalwijaya.com
- Saha, S., Singh, A., & Singhal, M. (2022). First aid guideline for burns: Educational approach & adaptation. *International Journal of First Aid Education*, 5(1), 21–28. Diakses dari <https://firstaidjournal.org/article/2388/galley/3162/download>
- Kementerian Kesehatan Republik Indonesia. (2022). Statistik kejadian luka bakar di Indonesia. Diakses dari <https://www.depkes.go.id>

World Health Organization. (2021). Burns: Fact sheet. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/burns>