

Students' Knowledge Level of First Aid in Managing Minor Open Wounds

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Abstract

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Article info:

Received: 2025-02-5
Revised: 2025-02-15
Accepted: 2025-02-27

e-ISSN: 3047-6054
Volume 2(1): 1-6,
February 2025

Background: Minor open wounds are a common type of injury in daily life. Open wounds that do not receive proper treatment may develop into more severe conditions. A solid understanding of emergency management from an early stage is crucial to preventing the patient's condition from worsening.

Objective: This study aimed to describe students' level of knowledge regarding first aid for minor open wounds.

Methods: This study employed a descriptive quantitative approach with a cross-sectional design. The sampling technique used was purposive sampling, involving 39 respondents.

Results: The findings indicated that students' level of knowledge about first aid for minor open wounds was in moderate category. Most students understood the basics of first aid; however, there were still gaps in knowledge regarding bleeding control and maintaining wound cleanliness to prevent infection.

Conclusion: The student's level of knowledge of first aid in managing minor open wounds in this study falls within the moderate category. Further efforts are necessary to improve students' understanding of first aid, especially in managing open wounds.

Keywords: First aid; minor open wounds; students' knowledge

Introduction

A wound is a form of disruption or damage to skin tissue that can occur due to physical injury, exposure to extreme temperatures, or certain medical conditions. The severity of a wound varies depending on the causative factors and its impact on the skin tissue and surrounding areas (Tabriz & Douroumis, 2022). One of the most common types of wounds in daily life is an open wound. If not properly treated, an open wound can lead to infection and slow down the healing process. On the other hand, appropriate treatment helps accelerate recovery and prevent further complications (Zulfa et al., 2008).

Among individuals aged 5–29 years, injuries caused by wounds are one of the leading causes of death. Each year, tens of millions of people experience non-fatal injuries that require medical treatment, ranging from emergency care to hospitalization. These injuries often have long-term effects, both physically and mentally, and may result in temporary or permanent disabilities requiring rehabilitation (World Health Organization, 2018).

Injuries that are not promptly and properly treated risk developing into more serious conditions and may even become medical emergencies. Therefore, understanding and acquiring skills in emergency management from an early stage are crucial aspects in preventing a patient's condition from worsening. In school settings, students' readiness to provide appropriate first aid is particularly important. Providing education and enhancing first aid knowledge in schools is a strategic step in equipping students to handle minor wounds quickly and effectively (Oktaviani et al., 2020). Delays in emergency patient care can worsen conditions and reduce the chances of optimal recovery, making every minute lost in medical intervention potentially fatal to patient safety (Melani et al., n.d.).

Recent studies indicate that the lack of practical first aid training in schools can negatively impact students' preparedness to respond effectively to situations emergencies (Rahmawati et al., 2024). A lack of hands-on experience in treating injuries may lead to inappropriate first-aid actions, potentially worsening the victim's condition. Therefore, structured and continuous training is essential to enhance students' ability to handle emergencies independently and confidently. Furthermore, improper wound management remains a global health challenge requiring greater attention, as its consequences can lead to infections, severe complications, and an increased burden on healthcare services (World Health Organization, 2007).

Instilling an understanding of first aid for managing minor wounds in schools not only helps students take care of themselves but also enables them to assist friends or others in emergencies. These skills can enhance rapid response to minor injuries, reduce the risk of complications, and foster awareness of the importance of basic medical interventions in daily life (Amalia et al., 2023). With increased awareness and education on first aid, students are expected to play an active role in preventing further risks from minor injuries and contributing to the creation of a safer and healthier environment, both at school and in the community.

Based on this background, this study aims to assess students' level of knowledge regarding first aid for minor wounds and identify the factors influencing their understanding. The findings of this study are expected to serve as a foundation for developing more effective educational strategies to enhance students' preparedness in handling minor injuries in school settings. Additionally, this research is expected to provide recommendations for schools to develop more systematic and sustainable first-aid training programs. With proper education, students will not only be able to take care of themselves but also acquire the skills to assist friends or others in situation emergencies, thereby creating a safer and more responsive school environment to unexpected incidents.

Methods

Study Design

This study employed a descriptive quantitative method with a cross-sectional design to assess students' knowledge level regarding first aid in managing minor open wounds. The study was conducted at MTs Muhammadiyah Pammase in January 2025.

Samples/Participants

The population of this study consisted of students at MTs Muhammadiyah Pammase. The sample was selected using a purposive sampling technique, with a total of 39 respondents who met the inclusion criteria.

Inclusion criteria:

1. Active ninth-grade students officially enrolled in the school.
2. Students who have received materials or information related to first aid, either through formal or non-formal education.
3. Students who are willing to participate as respondents.
4. Students who can read, write, and comprehend the questionnaire questions properly.

Exclusion criteria:

1. Students with a history of cognitive impairments or medical conditions that may affect their understanding of first aid materials.
2. Students who were absent during the data collection process.
3. Students who refused to participate or withdrew from the study.
4. Students who have received specialized first aid training outside the school curriculum.

Instruments

The instrument used in this study was a knowledge-level questionnaire on first aid for managing minor open wounds, developed by the researcher. The questionnaire consisted of 10 questions and utilized the Guttman Scale. The validity test confirmed that the questionnaire was valid, and Cronbach's alpha value was found to be 0.658, indicating that the questionnaire was sufficiently reliable.

Data Collection

Data were collected by the researchers and research assistants through the distribution of questionnaires to students to assess their knowledge of first aid in managing minor open wounds. The questionnaire included questions related to definitions, treatment steps, and appropriate actions in various minor open wound scenarios. Additionally, the data were analyzed quantitatively to categorize students' knowledge levels as low, moderate, or high.

Data Analysis

Data analysis in this study was conducted using univariate analysis to describe students' knowledge levels regarding first aid for managing minor open wounds.

Ethical Considerations

This study received ethical approval from the Research and Community Service Institution (LPPM) of STIKes Amanah Makassar with research permit number No: 013/LPPM_A/2/2025. Before data collection, the researcher provided respondents with an explanation of the study's objectives, benefits, and procedures. Research permission was obtained through informed consent, ensuring that participation in this study was voluntary. All respondents were made aware of their rights as participants and provided their consent by consciously and willingly completing the questionnaire.

Results

Based on Table 1, the majority of respondents were male, totaling 22 respondents (56.41%), while female respondents accounted for 17 respondents (43.59%). This indicated that the proportion of male respondents was higher than that of female respondents in this study.

Table 1. Characteristics of Respondents

Variable	Frequency (n)	Percentage (%)
Age		
13 – 14 years	27	69.23
15 – 17 years	12	30.77
Gender		
Male	22	56.41
Female	17	43.59
Total	39	100

Based on Table 2, the majority of students' knowledge levels regarding first aid for minor open wounds were categorized as moderate (79.49%), while 15.38% of students had a low knowledge level, and only 5.13% of students had a high knowledge level. This indicated that most students had a basic understanding of first aid but still required deeper comprehension to apply first aid more accurately. Students with low knowledge levels needed additional guidance, while those with high knowledge levels could serve as role models or learning resources for their peers.

Table 2. Respondents' Knowledge Level

Knowledge level	Frequency (n)	Percentage (%)
Low	6	15.38
Moderate	31	79.49
High	2	5.13
Total	39	100

Table 3 showed that the majority of respondents aged 13–14 years had a moderate knowledge level, with 20 respondents (51.28%) in this category. Meanwhile, in terms of gender,

the majority of respondents who had a moderate knowledge level were male, totaling 18 respondents (46.15%).

Table 3. Characteristic of Respondents by Knowledge Level

Respondents Characteristic	Knowledge level							
	Low		Moderate		High		Total	
	f	%	f	%	f	%	f	%
Age:								
13 – 14 years	5	12.82	20	51.28	2	5.13	27	69.23
15 – 17 years	1	2.56	10	28.21	0	0.00	12	30.77
Gender:								
Male	4	10.26	18	46.15	0	0.00	22	56.41
Female	2	5.13	13	33.33	2	5.13	17	43.59

*univariate analysis

Discussion

The research results indicate that students' knowledge level regarding first aid in treating minor open wounds is in moderate category. Most students understand the basic concepts of first aid, such as the importance of cleaning wounds. However, some aspects remain incompletely mastered, particularly in proper steps to stop bleeding and maintaining wound hygiene to prevent infection.

According to Notoatmodjo (2014), a moderate level of knowledge means that a person understands a concept but still requires additional information. Knowledge levels are generally categorized into low, moderate, and high, with education being the most influential factor. Individuals with higher education levels tend to process information more rationally. Research by Fitri et al. (2019) also reveals that education level plays a role in shaping knowledge. Furthermore, differences in students' knowledge levels can be influenced by various factors, such as access to information, school and family environment, peer interactions, personal experiences, and exposure to social media (Afandi, 2019).

Although most students understand the basics of wound care, some aspects remain poorly mastered, such as appropriate steps to stop bleeding and ensure wound cleanliness. A study by Susanti & Putri (2021), found that first aid training for Red Cross Youth (PMR) members improved their knowledge and skills in wound care, although some specific procedures were still not well understood. Similarly, Siregar (2018) discovered that health education on wound dressing techniques among middle school students increased their knowledge, though a deeper understanding of specific techniques was still required.

According to Fitri et al. (2019), students' knowledge of first aid is influenced by the sources of information they receive. Meanwhile, Simatupang (2016), states that age affects cognitive ability and reasoning skills. As individuals age, their cognitive maturity improves, ultimately enhancing their knowledge. Support this claim, stating that as students grow older, their ability to understand and apply first aid tends to improve, especially when supported by structured learning and hands-on practice (Harahap et al., 2025). However, limited practical training in schools can hinder students' preparedness in situation emergencies (Rahmawati et al., 2024). Research by Patniawati et al. (2024), also found that students who participated in training showed an increased understanding of basic first aid measures, such as how to stop bleeding, maintain wound hygiene, and handle minor injuries effectively. This reinforces the notion that education and hands-on experience play a crucial role in building student preparedness. Without adequate training, students are less confident and more likely to make mistakes in handling injuries, which could worsen a victim's condition.

The World Health Organization (WHO) emphasizes the importance of educating individuals of all ages on essential health topics, including emergency response skills. First aid plays a vital role in providing immediate care and attention to injured or ill individuals before professional

medical assistance arrives. According to Böttiger et al. (2017), first aid courses aim to equip the general public with skills to manage health emergencies using basic knowledge and techniques, without relying on specialized medical expertise or advanced technology. Several researchers have also explored the effectiveness of first-aid training for schoolchildren as a means of enhancing public awareness of first-aid and trauma management.

Given that the level of knowledge in this study falls into the moderate category, the researcher also suggests further efforts to enhance students' understanding of first aid, particularly in managing minor open wounds. Several recommendations include: 1. Strengthening First Aid Education in the Curriculum, Schools can incorporate more comprehensive first aid materials into the curriculum, either through specific subjects or extracurricular activities. 2. Practical Training and Simulations, Implementing practice-based learning methods, such as simulations and first aid demonstrations, can help students grasp procedures more effectively than relying solely on theoretical instruction. 3. Collaboration with Healthcare Professionals and Health Organizations, Schools can collaborate with medical professionals, the Youth Red Cross (PMR), or other health organizations to conduct regular first aid training sessions on wound management."

Conclusion

Students' knowledge of first aid in managing minor open wounds is in moderate category. This indicates that while students have a basic understanding of wound care, there are still limitations in certain aspects, such as maintaining wound hygiene. Therefore, further educational efforts, such as training, simulations, or the integration of first aid materials, are needed to enhance students' understanding and skills in properly and effectively managing minor open wounds.

Acknowledgment

The authors express gratitude to MTs Muhammadiyah Pammase and STIKES Amanah Makassar for providing support in completing this research.

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