



Improving Elementary School Children's Knowledge in Initial Injury Management through First Aid Socialization

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Abstract

Primary school children represent an active age group, where playing, running, and engaging in physical exercise form an essential part of their daily routines. Alongside these activities, however, lies the risk of various unfavorable conditions, including minor injuries, fainting, nosebleeds, and choking. Consequently, children at the primary school level should be equipped with fundamental knowledge of initial treatment or first aid for injuries that may occur during such activities. Providing children with this knowledge is crucial to minimize the severity of incidents, prevent secondary infections, accelerate recovery, and in certain situations, even save lives. This community service initiative was carried out with fifth- and sixth-grade students at MIN Gampong Piyeung, Montasik District, Aceh Besar Regency. The activity was structured into several stages: it began with the distribution of a pre-test questionnaire to evaluate the students' baseline understanding of first aid, followed by the delivery of socialization sessions on relevant first aid materials, and concluded with a post-test assessment. Observations demonstrated a significant improvement in knowledge following the intervention, reflected by an average score increase of 59.1%. These results highlight that socialization-based learning is an effective method for enhancing the basic knowledge and readiness of primary school children in responding to injuries in a proper and independent manner. Overall, this program emphasizes the importance of instilling first aid awareness at an early age as a preventive measure that can foster safer school environments and support children's physical and social development.

Article Info

Received: 07 September 2025

Revised: 10 October 2025

Accepted: 12 October 2025

Available online: 10 November 2025

Keywords

First Aid

Primary School Children

Injury Management

Health Education

Knowledge Improvement

1. Introduction

Primary school children are a physically active age group that undergoes rapid motor development. Activities such as playing, running, and exercising are integral to their daily lives. However, these activities also increase the risk of minor injuries such as cuts, bruises, sprains, nosebleeds, and even life-threatening incidents, one of which is choking. Injuries are one of the leading causes of morbidity among children worldwide, according to data from the World Health Organisation [1]. In Indonesia, minor injuries in children are often underestimated and inadequately managed due to the lack of knowledge regarding initial treatment or first aid, both by the children themselves and by those around them. A child in Blitar died from choking while eating sempol, as reported by [2]. This tragic and

unfortunate incident highlights the importance of having basic knowledge and skills related to first aid in cases of choking, particularly for children and the people around them.

First aid is the immediate assistance given quickly to individuals who experience injuries or sudden medical conditions before further medical treatment is available. Proper initial treatment plays a crucial role in reducing the severity of conditions, preventing secondary infections, accelerating recovery, and in some cases, saving lives. Therefore, basic knowledge of first aid should be introduced from an early age, including to primary school children. Educating children about first aid is expected to foster alertness, responsiveness, and independence in facing minor emergencies that may occur both at school and at home [3]–[5].

However, in practice, first aid education has not yet been formally integrated into the primary school curriculum. The knowledge possessed by students generally remains limited and passive, as they tend to rely on teachers or adults when injuries occur. This situation reflects a gap in the provision of essential basic skills for children. Thus, it presents both a challenge and an opportunity for community service activities to make a real contribution through socialization and first aid training programs for primary school students. Such activities are not only intended to increase knowledge but also to build attitudes and practical skills that are relevant to daily life. Through interactive educational approaches tailored to children's developmental stages, these programs are expected to improve students' understanding of different types of minor injuries and their appropriate management. This type of education also supports the goals of school health education, namely to shape caring, responsive, and responsible attitudes toward personal and others' safety [6]–[8].

Therefore, the implementation of first aid socialization for primary school students is a relevant strategy to support promotive and preventive efforts that align with the fundamental principles of community service: providing solutions to real problems in society through educational and sustainable empowerment approaches.

2. Literature review

Childhood injuries have become an important public health issue in many countries, including Indonesia. This is due to the fact that children are in a dynamic stage of development, possess a high level of curiosity, but lack the adequate ability to recognize and avoid potential dangers in their surroundings. Unintentional injuries such as falls, burns, choking, and traffic accidents are the leading causes of death and disability among children under the age of 15 worldwide [9].

Injury is defined as physical damage that may occur either intentionally or unintentionally as a result of exposure to mechanical, thermal, chemical, electrical, or radiation energy that exceeds the physiological threshold of the body [10]. Primary school children are considered a vulnerable group for injuries, particularly because of their high level of physical activity and limited ability to recognize and avoid risky situations. Common injuries in this age group include open wounds, minor bleeding, fainting, and choking. The high incidence of injuries in this group is influenced by several factors, including lack of adult supervision, limited use of protective equipment, risky behaviors, and unsafe environmental conditions [11].

Furthermore, studies indicate that boys are more likely to sustain injuries compared to girls, which is presumed to be associated with more aggressive and risk-taking physical activities [12]. Injuries not only cause physical harm but may also affect children's psychosocial well-being and academic development. Children who suffer from severe injuries are at risk of experiencing emotional disturbances such as anxiety and post-traumatic stress, which may ultimately hinder their learning process and social interactions [13].

Providing first aid quickly and appropriately is a crucial step to prevent worsening conditions and to accelerate recovery. Educational approaches through health education and hands-on practice have been proven effective in improving the knowledge and skills of educators in managing childhood injuries within the school environment [14]. In general, first aid is defined as the immediate initial assistance given to individuals experiencing injury or sudden medical conditions, with the purpose of stabilizing the condition until professional medical help is available [15]. The importance of first aid has been

emphasized by various international health organizations, as it has been shown to reduce complications, speed up recovery, and in some cases, save lives [16].

Introducing first aid education at an early age, especially in primary schools, plays a vital role in shaping awareness and basic skills in responding to emergencies [17]. Children should be provided with first aid knowledge through engaging, interactive methods tailored to their cognitive development. With the right approach, children can acquire both the knowledge and the ability to apply basic first aid techniques in daily life. A number of studies have demonstrated that school-based first aid training programs significantly improve students' knowledge and skills. Training that combines theoretical components with practical applications has been shown to be most effective in fostering children's preparedness for emergencies [18]–[20].

In addition, the "Kids Save Lives" program, supported by the World Health Organization (WHO), encourages the integration of first aid education into school curricula globally. This program has been proven to enhance children's preparedness while also strengthening community resilience in the face of emergencies [21]–[23]. First aid education can also be effectively adapted to local contexts by considering cultural values, traditions, and learner characteristics, thereby making its implementation more relevant and sustainable [24].

3. Methodology

This Community Service Program (PkM) aimed to improve the knowledge of primary school students regarding initial management of minor injuries. The activity was conducted at MIN Gampong Piyeung, Montasik District, Aceh Besar Regency, targeting fifth- and sixth-grade students. The implementation began with the administration of a pre-test questionnaire consisting of 10 multiple-choice questions designed to assess the students' baseline knowledge of minor injury management. The content of the questionnaire covered four main aspects, namely wound care, nosebleeds, fainting, and choking. The questions were developed based on common situations that may occur in the daily lives of students, both in the school environment and at home.



Figure 1: Students complete a questionnaire on first aid as a pre-test.

As depicted in **Figure 1**, the activity began with students filling out a questionnaire of about first aid as a pre-test. This stage was crucial for assessing the baseline knowledge of students regarding the initial management of minor injuries before the intervention. The image shows students actively engaged in completing the questionnaire under the guidance of facilitators, which reflects their enthusiasm and readiness to participate in the program. Conducting a pre-test not only provided valuable data for evaluating the effectiveness of the socialization but also encouraged students to reflect on their existing knowledge and awareness of first aid. This process created a strong foundation for subsequent learning.

activities, ensuring that the intervention was tailored to address gaps in students' understanding while fostering a sense of involvement from the very beginning of the program.

The students were given the opportunity to answer the questions in the questionnaire based on their prior knowledge. After all questionnaires were collected by the community service team, the activity continued with a socialization session on first aid. In this session, the team delivered theoretical material on the initial management of several types of minor injuries, namely wounds, nosebleeds, fainting, and choking. To make the material more engaging and easier to understand, the presentation was supported by visual media in the form of PowerPoint slides.

In addition to the theoretical explanation, the socialization session was enriched with direct practical demonstrations conducted by the team, actively involving the students. The students acted as victims in simulated emergency situations, making the learning process more contextual and applicable. Following the completion of the socialization, the activity was concluded with a discussion and question-and-answer session to reinforce the students' understanding. The students were then asked to complete a post-test questionnaire containing questions similar to the pre-test, in order to measure the increase in knowledge after the intervention. As a form of appreciation, the team also provided small rewards to students who were able to correctly answer first aid-related questions during the interactive session.



Figure 2: PkM Team Conducts Socialisation regarding First Aid

As shown in **Figure 2**, the socialization session was conducted in an interactive classroom setting where students were seated attentively while the community service team delivered first aid materials using visual media. The use of a projector and presentation slides provided clear illustrations of basic first aid techniques, making it easier for students to understand the concepts. The involvement of multiple facilitators ensured that the session was not only one-directional but also interactive, allowing students to ask questions and actively participate. This learning atmosphere reflects the effectiveness of combining theoretical explanations with visual support in stimulating students' curiosity and maintaining their focus during the session. Such an approach highlights the importance of adapting teaching strategies to the needs of children, ensuring that knowledge transfer is both engaging and meaningful.

4. Result & Discussion

This community service activity aimed to improve the knowledge of primary school children regarding the initial management of injuries through first aid socialization. As illustrated in **Figure 3**, the implementation involved active participation from students who were gathered in their classroom environment. The image shows students seated on the floor while attentively working on questionnaires, guided by facilitators from the community service team. This setting reflects a contextual learning atmosphere where children were encouraged to engage directly with the material, rather than receiving information passively. The use of pre-test questionnaires, as seen in the figure, allowed students to recall and apply their prior knowledge before receiving first aid education. This step was important for identifying the baseline level of understanding regarding the management of minor injuries such as wounds, nosebleeds, fainting, and choking. Moreover, the informal seating arrangement, with students completing the tasks together, fostered a collaborative learning environment that encouraged discussion and mutual support among peers.



Figure 3: Students Re-Fill Out the Questionnaire as a Posttest after the Socialisation

Figure 3 also illustrates the facilitator's role in providing guidance and motivation during the learning process. The presence of the community service team ensured that students remained focused, while also creating a supportive atmosphere for learning. This approach highlights that the socialization was not only a transfer of knowledge but also an interactive activity designed to engage children actively. Overall, the depiction emphasizes how first aid socialization can be effectively integrated into school settings, making learning more meaningful, participatory, and closely related to the children's daily experiences.

Table 1 shows that there was a measurable improvement in the knowledge of elementary school students regarding first aid after the socialization activity. The average score before education was 60.8, which indicates that most students had limited prior understanding of initial treatment for injuries. Following the intervention, the average score increased to 72, representing an 11.2% improvement. This result demonstrates that the use of interactive learning methods, including visual media, demonstrations, and simulations, was effective in enhancing students' comprehension. Although the improvement may appear moderate, it is significant considering the short duration of the program and the fact that this was the students' first structured exposure to first aid education. These findings highlight the potential impact of integrating similar programs into the school curriculum to ensure sustainable knowledge development and preparedness in handling minor injuries.

Table 1. Average Score of Elementary School Students' Knowledge of First Aid Before and After Socialisation

Aspects Assessed	Average Score Before Education	Average Score After Education	Improvement (%)
Knowledge of initial treatment for injuries	60,8	72	11.2%

Based on the evaluation conducted through pre-tests and post-tests, it was found that there was a significant improvement in students' knowledge regarding the concepts and practices of first aid. Prior to the socialization activity, most students demonstrated an average score of 60.8 concerning various types of minor injuries and the appropriate initial management steps, such as wound care, handling nosebleeds, fainting, and especially choking conditions. Primary school students generally do not yet possess independent abilities in managing minor injuries due to the absence of formal first aid education within the school environment, consistent with the findings of a study conducted by [25]. After the socialization was delivered, there was a considerable increase in understanding, as reflected in the post-test results and students' involvement during the first aid simulations. The average knowledge score after the intervention rose to 70, with a percentage increase of 11.2%. This indicates the effectiveness of the intervention provided. The use of visual media such as PowerPoint slides, illustrated stories, and direct demonstrations proved effective in enhancing students' attention and comprehension of first aid concepts. Practical activities, such as techniques to stop minor bleeding, manage choking, and dress wounds, offered concrete and memorable learning experiences. The importance of using child-friendly teaching materials to enhance first aid skills at the primary school level is further supported by a study conducted [26].

In addition to knowledge improvement, students' active participation in discussions and simulations also created an enjoyable and interactive learning atmosphere. The experiential learning approach applied in this activity was proven effective in strengthening both conceptual understanding and practical skills among primary school children [27]–[29]. Furthermore, this socialization activity demonstrated that first aid education not only contributed to enhancing students' knowledge but also played a role in shaping positive attitudes toward the importance of helping oneself and others in minor emergency situations. The cultivation of caring values and emergency responsiveness forms an integral part of health education objectives at the primary school level, as stated in the guidelines of the Ministry of Health of the Republic of Indonesia [6].

**Figure 4.** Group Photo of the Community Service Team with Teachers and Students

Although the results of the activity showed positive impacts, they were not yet optimal. Several challenges remained, including limited training time, participants being restricted to only fifth- and sixth-grade students, and differences in students' learning abilities. Therefore, continuous support from

schools, teachers, and the involvement of school health cadres (UKS) is crucial to ensure that first aid education programs can be implemented regularly and systematically. The importance of establishing school health cadres to ensure the sustainability of first aid programs aligns with the findings of [30]. As shown in **Figure 4**, the group photo illustrates the collaboration between the community service team, teachers, and students who actively participated in the program. This moment reflects the spirit of partnership and mutual support in implementing first aid socialization activities at school. The involvement of teachers alongside the community service team emphasizes the importance of sustainability, as teachers play a key role in reinforcing the knowledge and skills acquired by students. Meanwhile, the students' enthusiastic presence in the photo symbolizes their engagement and readiness to learn, indicating that such programs not only increase knowledge but also foster a sense of togetherness and shared responsibility in creating a safer school environment.

5. Novelty of the Study

This article offers novelty by addressing the importance of first aid education specifically for primary school students through a structured socialization program in a rural Indonesian context. While previous studies have generally highlighted the significance of first aid knowledge among teachers, parents, or adolescents, limited attention has been given to younger children as direct recipients of first aid education. The program conducted in MIN Gampong Piyeung demonstrates that primary school children are capable of understanding and practicing basic first aid techniques when the learning process is designed with child-friendly methods, such as visual media, interactive demonstrations, and simulation-based learning.

Another aspect of novelty lies in the use of community service (pengabdian kepada masyarakat) as a platform to simultaneously measure knowledge improvement through pre-test and post-test evaluations, while also cultivating positive attitudes and readiness in emergency response. The findings show a measurable increase in knowledge (11.2%), proving that early intervention at the primary school level is effective not only in enhancing cognitive understanding but also in instilling caring values and preparedness for emergencies. This approach contributes new insights to the field of public health and education by emphasizing the integration of first aid education into the elementary school curriculum as a sustainable preventive strategy. Moreover, the study highlights the role of collaborative community service initiatives as an innovative model for bridging the gap between academic research and practical health promotion in school settings.

6. Conclusion

The first aid socialization activity conducted for primary school students at MIN Gampong Piyeung, Montasik District, Aceh Besar Regency, showed positive results. There was a significant improvement in understanding the concepts and techniques of initial management of minor injuries such as wounds, nosebleeds, fainting, and choking, with an average score increase of 11.2%. The learning method that combined visual media, practical demonstrations, and interactive simulations proved effective in enhancing students' knowledge. In addition to cognitive improvement, this activity also succeeded in fostering positive attitudes and raising awareness of the importance of first aid among primary school children. Therefore, the formal integration of first aid education into the primary school curriculum is highly recommended to support the development of caring character and preparedness in dealing with minor emergency situations.

7. Recommendations

Schools are expected to routinely integrate first aid materials into the curriculum or extracurricular activities, so that students can acquire knowledge and skills on an ongoing basis and apply them directly

in daily life. First aid training and socialization should be directed not only at students but also at teachers and school staff, so that the entire school community is prepared and capable of providing first aid quickly and appropriately in the event of accidents or injuries.

Acknowledgement

This community service program was entirely funded by the collective contributions of all authors, without any external financial support. The authors sincerely thank the school community of MIN Gampong Piyeung for their cooperation and active participation throughout the program.

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