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Educational Intervention on Splinting Management and First Aid for Snake Bites in Gunungsari Tourism Village, Boja

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A B S T R A C T

Gunungsari Village, renowned for its camping and natural tourism attractions nestled amidst mountains and rivers, faces potential hazards such as snake bites and fractures resulting from falls. Prompt and appropriate first aid and treatment are crucial in mitigating the risks associated with these incidents. However, there is a notable gap in public knowledge regarding snake bite management and the availability of antivenom, which can exacerbate mortality rates. In response, the community service team from Faculty of Nursing and Health Sciences, The University of Muhammadiyah Semarang initiated a training program aimed at educating locals about snake bite management and splinting techniques. Fifteen participants, comprising members of the disaster management agency team in the Boja area, engaged in the training sessions. While possessing foundational knowledge, participants acknowledged the novelty and importance of information regarding snake venom management. Pre-training assessments revealed an average knowledge score of 68, which significantly increased to 84 post-training, indicating a substantial improvement in understanding. Additionally, simulation exercises assessing splint application demonstrated commendable proficiency among participants, with an average score of 82. The training initiative underscores the significance of enhancing community preparedness in managing medical emergencies such as snake bites and fractures. The newfound knowledge and skills acquired through the training sessions equip participants with the ability to administer timely and effective first aid in emergency situations. Continuous training efforts are recommended to sustain and further enhance the preparedness of Gunungsari Village residents in addressing medical emergencies in the future.

INTRODUCTION

Gunungsari Village, known for its camping facilities and natural attractions, poses potential risks due to its proximity to mountains and rivers, increasing the likelihood of venomous snake bites and falls resulting in injuries or fractures. According to data from the World Health Organization (WHO), approximately 4.5 million individuals worldwide are affected by snake bites annually, with 2.7 million experiencing severe injuries and 125,000 fatalities (Kartika et al., 2022). WHO classifies snake bites as neglected tropical diseases, contributing significantly to global mortality rates, which exceed 100,000 deaths per year. Several factors contribute to snake bite fatalities, including the type of venom, initial treatment, patient condition, healthcare accessibility, and antivenom availability. Insufficient public awareness regarding snake bite first aid and limited access to antivenom can further increase mortality rates (Keppres, 2020). Indonesia, as a tropical country, has the highest number of snake bite cases.

Statistics indicate an estimated 135,000 cases nationwide in the year 2016 (Kartika et al., 2022; Kesehatan, 2018).

In tourist destinations, apart from incidents involving snake bites, injuries arising from falls and fractures are also commonly observed. Neglecting timely treatment of these injuries may lead to long-term impairments or even fatalities due to severe hemorrhaging (Kartika et al., 2022; Kementerian kesehatan Republik Indonesia, 2021). One primary intervention undertaken before transferring the patient to a medical facility involves the application of splints (Amri et al., 2017; Khairul Rahmat et al., 2020). Splinting is employed to immobilize the affected area and seal wound openings to prevent excessive bleeding (Kartika et al., 2022). Splinting in tourist areas is typically temporary; upon arrival at healthcare centers, the splints can be removed by healthcare personnel at hospitals for further treatment (Pranata et al., 2021; Priester, 2016).

Snake bites and fractures have the potential to inflict harm on bodily tissues, including damaging blood vessels leading to swelling, decreased blood pressure, corneal damage, uvea bleeding, and erythrocyte rupture (Kartika et al., 2022). However, the extent of the danger posed by these incidents has not been adequately met with appropriate prehospital management. Typically, initial treatment is carried out by the victim or those nearby, but often this exacerbates the victim's condition due to limited community knowledge. Traditional methods such as wound suction, cauterization, herbal remedies, or tightly binding snake bite wounds are commonly employed for first aid, all of which may worsen the wound. The aim of this initiative is to equip all tourism providers in Gunungsari village with the skills to effectively apply bandaging and manage snake bites.

METHOD

Community Service Activity Preparation

Effective planning is essential to ensure the smooth execution of community engagement activities according to the established plan.

1. Planning

The preparation phase commences with assessing the feasibility of organizing community engagement initiatives involving the constituents of Gunungsari village, facilitated by the village principal. Subsequently, this assessment leads to the preparation of materials and the scheduling of implementation.

2. Conducting Community Engagement

Community service activities involve educating participants on bandaging techniques and initial first aid responses to snake bites, delivered through PowerPoint presentations and distributed leaflets.

Following the presentation, a question-and-answer session ensues, followed by practical demonstrations.

3. Educational Participants

The target audience for the educational program comprises the members of the tourism community within Gunungsari village.

Materials and Methods

The educational content covering bandaging techniques and initial first aid responses to snake bites includes the following topics:

1. Understanding Snake Bites: Definition and Characteristics
2. Preventive Measures against Snake Bites
3. Identifying Different Types of Snakes and Methods for Differentiation
4. Recognizing Signs and Symptoms of Snake Bites
5. Management Strategies and Immediate First Aid for Snake Bites

Bandaging, Types of Bandaging, and Basic Bandaging Techniques

The method utilized includes PowerPoint presentations for lectures and discussions, alongside practical demonstrations using bandaging equipment for first aid in snake bite cases., Gresik regency.

RESULT AND DISCUSSION

Snake bites and fractures can result in tissue damage, blood vessel rupture, swelling, reduced blood pressure, corneal damage, uvea bleeding, and erythrocyte rupture (Kartika et al., 2022). However, the significant risks associated with these injuries have not been adequately addressed through appropriate prehospital care (Jacobson & Paul, 2016). Typically, initial treatment is provided by the victim or bystanders, but this often worsens the condition due to limited community knowledge (Ahayalimudin & Osman, 2016; Chiu et al., 2012). Consequently, traditional methods such as wound suction, cauterization, herbal remedies, or tightly binding the wound with ropes are commonly relied upon, which theoretically may exacerbate the wound condition (Jacobson & Paul, 2016; Kartika et al., 2022).



Figure 1. Educational Participants



Figure 2. Bandaging Implementation Demonstration



Figure 3. Snake Bite Management Practice



Figure 4. Simultaneous Snake Bite Bandaging Practice

Fifteen participants engaged in an educational session focused on the application of splints and the management of snake bites. All attendees were members of the disaster management team in the Boja region. While the team possessed fundamental knowledge beforehand, information pertaining to snake bite management presented novel insights, proving significantly advantageous to all participants. Following pre-test and post-test assessments, it was observed that participants' knowledge markedly improved, with the average score rising from 68 prior to the training to 84 thereafter. Moreover, assessments of simulated splint application exercises demonstrated commendable proficiency, yielding an average score of 82.

CONCLUSION

The training and simulation sessions yielded a notable enhancement in participants' knowledge levels, both pre-and post-engagement. The dissemination of information, particularly concerning snake bite management, proved to be novel and valuable to members of the tourism village. Demonstrating enthusiasm, all attendees exhibited improved bandaging skills. It is imperative that such training initiatives are sustained consistently to uphold the acquired knowledge and further refine the skills of the tourism village members in subsequent endeavors. The implementation of routine simulation activities on an annual basis is deemed imperative for the future, as it promises significant benefits and continuous improvement opportunities.

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