
Sports Health Education: Injury Treatment in Karate Training in Pekanbaru City

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Abstract

This community service activity aims to improve the knowledge and skills of karate athletes in preventing and treating sports injuries, particularly through education on injury care using the RICE method (Rest, Ice, Compression, Elevation). The methods used are educational and participatory, including interactive lectures, demonstrations and practical workshops on RICE, discussions and question and answer sessions, and evaluation through interviews. Participants consisted of 29 karate athletes from various clubs in Pekanbaru. The results of the activity showed enthusiasm and active participation from the participants. Based on observations and interviews, there was an increase in understanding of common types of injuries (such as sprains, bruises, muscle strains, and cramps) as well as an increase in psychomotor skills and confidence in performing first aid independently using the RICE principle. It was concluded that this sports health education programme was effective in equipping athletes with theoretical knowledge and practical skills to handle injuries, reduce the risk of severity, and support the continuity of safe training. Similar education is urgently needed given the low level of sports health literacy among novice and adolescent karate athletes.

Keywords: Sports Health Education, Injury Care, Karate, First Aid, Rice.

INTRODUCTION

Karate is a martial art that requires physical endurance, agility, and technical mastery. High-intensity training is necessary to achieve excellence, but this often carries the risk of injury. According to Bompa & Buzzichelli (2019), high-intensity exercise without an understanding of sports health principles can increase the likelihood of overuse injuries and acute injuries. In the context of karate, common injuries include sprains, contusions, muscle strains, and muscle cramps due to explosive movements and physical collisions (Koutedakis & Jamurtas, 2004).

Conditions in the field show that many karate athletes, especially at the beginner and adolescent levels, do not have adequate knowledge about the prevention and treatment of sports injuries. This is in line with Prentice's (2015) opinion that athletes' lack of understanding of injury treatment principles can lead to incorrect handling, so that minor injuries have the potential to develop into more serious injuries. For example, the application of the Rest, Ice, Compression, Elevation (RICE) method, which should be the standard first aid, is often unknown or not performed correctly by athletes.

In addition, coaches generally focus more on mastering techniques and improving physical condition in karate training, while the health aspects of sport have not yet become a primary concern. As a result, athletes are not accustomed to taking injury prevention measures such as warming up, stretching, cooling down, and recovery techniques after training. This condition is in line with the findings of Anderson & Hall (2011) that sports health education is

very important to be given directly to athletes so that they can independently recognise, prevent, and treat injuries.

Given these conditions, a sports health education programme specifically designed for karate athletes is needed. Through this education, athletes will gain theoretical understanding and practical skills in injury care. This knowledge will help them perform appropriate initial treatment, reduce injury rates, and maintain healthy, performance-oriented training.

The problems identified in this community service activity based on the above analysis are as follows:

1. What is the knowledge of karate athletes regarding the types of injuries that commonly occur during training and competitions?
2. What is the understanding and skill level of karate athletes in providing first aid for sports injuries, particularly in the use of appropriate and safe methods?

The objectives of this community service activity are:

1. To provide karate athletes with knowledge and understanding of the types of injuries that commonly occur during training and competitions.
2. To improve karate athletes' understanding and skills in administering first aid for sports injuries, particularly through the application of appropriate methods.

RESEARCH METHODS

The community service activities will be carried out using an educational and participatory approach, so that karate athletes not only receive theoretical material, but also have the opportunity to directly practise injury care skills. The implementation methods include:

1. Interactive Lecture

Presentation of material on sports health, common types of injuries that occur during karate training, and principles of injury care. The media used include presentations, short videos, and examples of karate injuries. The purpose of this session is to provide karate athletes with knowledge about the types of injuries that often occur during training and competitions, as well as to improve athletes' theoretical understanding of the importance of proper injury prevention and treatment.

2. Demonstrations and Practical Workshops

Athletes will be involved in hands-on practice of first aid for sports injuries based on the Rest, Ice, Compression, Elevation (RICE) principle. Simple techniques will be practised, such as how to apply ice packs, elastic bandages, and muscle stretching for recovery. The practical sessions will be guided by speakers who are experienced in sports health, particularly in treating injuries in athletes.

3. Discussion and Question and Answer Session

Providing athletes with the opportunity to ask questions about their personal experiences with injuries they have suffered. The discussion is aimed at finding practical solutions that can be applied according to each athlete's training conditions. Training athletes to be sensitive in recognising the symptoms of minor and serious injuries.

4. Activity Evaluation

The evaluation was conducted through interviews with several participants to measure the athletes' knowledge improvement after the activity. The results of this evaluation can be used to assess the strengths and weaknesses of this community service activity.

RESULTS AND DISCUSSION

This community service was held on 29 November 2025 at the Special Sports School in Pekanbaru, Riau. There were 29 participants in this activity, consisting of karate athletes from SKO, WKC, and students from SMA 4. The data on participants who took part in the educational or training activities is as follows.

Table 1.

No	Name	SEX	Age
1	Nadif Alfazli Efendi	M	13 th
2	Kayla Dima Aprilia	F	17 th
3	Desriyana Rosa	F	23 th
4	Amellia Salsabillah Putri	F	20 th
5	Bayu Bomantara	L	21 th
6	Raisya Indriyani	F	13 th
7	Aisyah Ayudia Inara	F	13 th
8	Auliya Sabrina	F	14 th
9	Saskia Candra	F	14 th
10	Rafif	M	18 th
11	Rahman	M	14 th
12	Fuji	F	17 th
13	Yeselin Pasaribu	F	18 th
14	Joseph Sinaga	M	17 th
15	Mailahana Nurfani	F	17 th
17	Rafeed Huzaifah	M	16 th
18	Lukas Natio	M	16 th
19	Marcel Moniaga	M	17 th
20	Clara Dwi Nurdita	F	16 th
21	Viola Pramudita	F	16 th
22	Daniel Jasvino	M	15 th
23	Daffa Aprialdi	M	15 th
24	Dayra Ash Shaf	F	16 th
25	Hafizh Rhadit	M	15 th
26	Baraka Arza	M	16 th
27	Raditya Anggra	M	16 th
28	Eben Haezer Sitompul	M	15 th
29	Junior King	M	15 th

Source: SKO Athlete Data

The initial activity of this community service programme provided health education to karate athletes at SKO through seminars or workshops on Injury Care for Karate Athletes. The seminar was held at the Rumbai Athletes' Dormitory. The resource person for this activity was a lecturer from the Riau University Department of Sports Education. This activity focused on karate athletes because this sport is very prone to injuries, so the team implementing the activity focused on karate athletes in order to increase their knowledge and alleviate injuries for those who had suffered injuries. This activity was also attended by karate coaches at SKO. During

the seminar, the participants were very enthusiastic about listening and participating, so the activity was very interactive. Participants not only listened to the material presented by the speaker but also asked questions and provided feedback as a positive response. This demonstrated active engagement from the participants, ensuring that the material presented was well understood.



Figure 1. Seminar Team and Participants

This activity was well received by SKO karate athletes because it can be said that they have very little information and knowledge about injury care, and participants were very enthusiastic because they were given proper education on how to provide first aid for injuries so as not to worsen the condition. Incorrect injury care can worsen the athlete's condition and prolong their recovery time. With education on injury care, athletes are able to provide first aid to themselves and their fellow athletes. Participants were given material on the Rest, Ice, Compression, Elevation (RICE) method and immediately practised how to provide proper injury care as shown in the following image.



Figure 2. Treatment of Foot Injuries

Figure 2 shows how to care for and treat athletes who experience leg cramps. The seminar also explained how to provide first aid for bruises on the face and other parts of the body.

During the demonstration and practical workshop sessions, athletes were actively involved in practising first aid steps using the RICE principle (Rest, Ice, Compression, Elevation). Before the training, most participants admitted that their knowledge of systematic injury management was very limited. They tended to treat injuries such as bruises or cramps in simple ways, such as resting for a while or massaging, without understanding safe and effective protocols. Through simulations of common injuries such as leg muscle cramps (Figure 2) and facial bruises, participants were taught the correct sequence for applying RICE: resting the injured area, applying ice wrapped in cloth for 15–20 minutes, bandaging with an elastic bandage without applying too much pressure, and elevating the injured area.

The findings from post-practice observations and interviews showed an improvement in participants' psychomotor skills and confidence in performing first aid. They were able to explain the reasons behind each step of RICE: ice reduces internal bleeding and swelling, compression limits oedema, elevation aids fluid drainage, and rest prevents further injury. Participants also became more aware of common mistakes, such as applying ice directly to the skin or bandaging too tightly, which can interfere with circulation.

In the discussion, the effectiveness of RICE education is in line with Prentice's (2015) findings, which emphasise that proper initial treatment can prevent complications and shorten recovery time. Participants' enthusiasm during the practical session reflects the real need for clear and applicable guidelines. By mastering these basic techniques, athletes can not only treat themselves but also assist their training partners, creating a training environment that is more responsive to safety. Proper implementation of RICE in the first few minutes after an injury is a critical investment in sports injury management, especially in high-risk disciplines like karate, which are prone to acute trauma.

CONCLUSION

Based on the implementation of community service activities, it can be concluded that sports health education on injury care has successfully improved the knowledge and skills of karate athletes. Athletes have gained a better understanding of common types of injuries and are able to apply the RICE method (Rest, Ice, Compression, Elevation) as first aid. Positive responses and active participation indicate a high need for this type of education. Through an educational-participatory approach that combines theory and practice, athletes not only gain theoretical understanding but also practical skills that can reduce the severity of injuries and accelerate recovery. Thus, this programme contributes to building awareness of the importance of self-care and injury prevention to support safe and sustainable training.

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