



## Self-Massage Training in Overcoming Post-Training Fatigue for Running Athletes

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**Abstract:** This service aims to provide training to athletes and track coaches in Gorontalo City regarding self-massage techniques to effectively overcome post-workout fatigue so that they can improve performance and speed up muscle recovery. This service was carried out at the Nani Wartabone Sports Center, Gorontalo City, which used some equipment, namely massage beds, mattresses, foam rollers, massage guns, mats, magnetic therapy back massagers, olive oil, and face towels. The method for this service was designed through field observation procedures, coordination with administrators, Focus Group Discussions, training, and evaluation. The results of this service show that the self-massage training carried out in Gorontalo City was proven to be effective in improving the skills and knowledge of athletes and coaches in dealing with post-training fatigue. The results of the training showed very satisfying participation, productive collaboration, and good application of the material by the participants. The self-massage technique taught was successfully implemented effectively, providing a positive impact on reducing fatigue and increasing the participants' body fitness.

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## Introduction

Sports massage is a specific technique designed to meet the physical needs of athletes, both before and after intense physical activity (Boguszewski et al., 2021; Welis et al., 2023). This massage aims to improve performance, prevent injury, and speed up recovery by reducing muscle tension, increasing blood circulation, and eliminating toxins from the body (Aisyah et al., 2021; Akbar et al., 2022; Muhibbi et al., 2023). The techniques used in sports massage include various methods such as tissue heating, deep pressing, stretching, and joint manipulation (Hidayat & Ibrahim, 2021; Lubis et al., 2023). In addition, this massage also serves to mentally prepare athletes, helping them reach peak condition and improving overall well-being (Dakić et al., 2023; Shen et al., 2021). Thus, sports massage is not only important for physical recovery but also for maintaining the athlete's emotional and mental balance.

Sports massage is very important for athletes because it is directly related to their need to maintain peak performance and prevent injury (Rizal et al., 2023). Athletes often experience muscle tension, fatigue, and microtrauma due to intense training and competition. Sports massage helps treat this problem by improving blood circulation, which speeds up the delivery of oxygen and nutrients to tired muscles, as well as speeding up the removal of lactic acid and other toxins. Techniques such as tissue warming and deep pressing can help relieve



muscle tension and soreness, while stretching and joint manipulation increase flexibility and range of motion. In addition, this massage can also help athletes overcome stress and mental tension, which is important for maintaining focus and motivation. Thus, sports massage meets the physical and mental needs of athletes, helping them achieve and maintain top conditions throughout the competition season.

Self-massage is an effective alternative for athletes to meet daily recovery and self-care needs when it is not always possible to access a professional therapist (Martínez-Aranda et al., 2024; Nakai et al., 2023). Self-massage techniques can help athletes reduce muscle tension and improve blood circulation, similar to the benefits of professional sports massage (Kerautret et al., 2021; Kovaleva & Kovalev, 2019). Using tools such as foam rollers, massage balls, or just their own hands, athletes can target specific areas that often experience tension and stiffness from intense training. Self-massage allows athletes to proactively manage their recovery, prevent injury, and prepare their bodies for the next training session. It also gives them greater control over their body care, allowing for a rapid response to discomfort or early signs of injury. By involving simple massage techniques such as circular massaging, deep pressure on trigger points, and tissue stretching, athletes can maintain their physical and mental fitness, ensuring that they remain in top condition throughout the competition season.

For running athletes, the need for physical maintenance and effective recovery is very important because they often face muscle tension, fatigue and a high risk of injury (Kurniawan & Kurniawan, 2021; Yusuf et al., 2020). Self-massage becomes an invaluable technique in their routine. Runners can use self-massage techniques to treat common problems such as tension in the calves, hamstrings and plantar fascia. By using a foam roller, runners can release tension in large muscles such as the front and back thighs, and increase joint flexibility and mobility. Massage balls can be used to target smaller, more specific areas, such as the arch of the foot or gluteus muscles, which are often difficult to reach with traditional massage methods. Through this self-massage technique, runners can increase blood flow to tired muscles, speeding recovery, and reducing the risk of injury due to stiff or tense muscles. Self-massage also helps runners to be more aware of their own body condition, allowing them to recognize early signs of discomfort or injury and take preventative action. Thus, self-massage not only meets runners' physical needs for recovery and injury prevention, but also helps them maintain mental balance and prepare themselves for the best performance in every training and competition.

In the midst of a routine full of intensive training and competitions that demand peak performance, athletes and coaches realize that self-massage is the key to overcoming fatigue and maintaining optimal physical condition. In training sessions that often result in muscle tension and extreme fatigue, self-massage techniques offer a practical and effective solution. With simple tools like foam rollers and massage balls, athletes can reduce tension in tired muscles, speed recovery and prevent injury. The authors' observations suggest that self-massage training not only enriches athletes' knowledge of their own bodies but also gives them the tools to maintain physical and mental balance, ensuring they are always ready for the next challenge. Coaches also see great benefits in incorporating self-massage into training programs, as it gives athletes greater control over their recovery and allows for a quick response to early signs of injury. Through the application of these simple techniques, athletes are able to maintain their best performance throughout the competition season, making self-massage an important element in their self-care strategy. The aim of this service is to provide training to athletes and track coaches in Gorontalo City regarding self-massage techniques.



With this training, it is hoped that athletes can overcome post-workout fatigue effectively, so that they can improve performance and speed up muscle recovery. In addition, coaches will also gain knowledge to help their athletes apply this technique independently and correctly.

## Method

This service uses several methods in its implementation, the first method is lectures, demonstrations, discussions and even practicums. This is done so that participants really understand how to apply self-massage to overcome fatigue. The subjects of this service include fifteen athletes and three running sports coaches in Gorontalo City. Overall, this activity started with observations starting July 6 2024 then coordination on July 7 2024. Self-massage training will be held from Saturday 13 July 2024 to Sunday 14 July 2024. So this activity lasts for one week. This service is divided into two sessions, starting with a session on the basics of massage techniques. Then the second session carried out self-massage training. Evaluation of activities is carried out using observation sheets for training participants. Data analysis techniques in this service use data collection, data reduction, data presentation and drawing conclusions. The stages in this service are designed through field observation procedures, coordination with administrators, Focus Group Discussions, implementation of training, and evaluation.

## Result and Discussion

All fifteen participants and three running sports coaches in Gorontalo City seemed enthusiastic about taking part in self-massage training in Gorontalo City. The first stage is to carry out field observations.



**Training Field**



**Location of Service**

**Figure 1. Field Observations and Service Locations**

July 6, 2024, on Saturday. The author made observations on the training ground located on the Merdeka Stadium track, Gorontalo City, then also determined the location of the service which was located next to the Merdeka Stadium track, Gorontalo City, namely the Nani Wartabone Sports Center. The second and third stages are coordination with the management, Focus Group Discussion as follows.



**Figure 2. Coordination with Management as well as Focus Group Discussion**

July 7, 2024 on Sunday. The author coordinated with the management as well as a Focus Group Discussion. This stage resulted in the implementation of the service being carried out from Saturday 13 July 2024 to Sunday 14 July 2024. Partners provided space and food during the service. The fourth stage is the implementation of training.



**Figure 3. Implementation of Training**

Saturday 13 July 2024 to Sunday 14 July 2024 the service was carried out. The author also used this opportunity to transfer knowledge to the participants. The methods used are lectures, demonstrations, discussions and even practicums.

The fifth stage is carrying out an evaluation. The evaluation method is carried out by conducting direct observations of participants during the program to see active participation, interaction and application of the material presented. The direct observation sheet carried out by the author includes the level of participation, collaboration and cooperation, application of the material, skills acquired, and responses to questions. The overall record of the observation sheet evaluation is as follows:

**Table 1. Summary of Overall Evaluation Results using the Observation Sheet**

Criteria	Notes
Participation rate	Participant participation showed very satisfying results. The participants were actively involved in each session, both in group discussions and during question and answer sessions. They not only listen enthusiastically, but also ask relevant questions and provide constructive feedback. It was seen that the participants had prepared themselves well, showing high interest in the material presented. Their involvement in direct practice was also very significant, with almost all participants able to apply the theory provided in real situations. Interaction between participants ran smoothly, reflecting effective collaboration and a high spirit of cooperation. This active



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	participation is an important indicator that the service program has run according to expectations and has had a real positive impact.
Collaboration and cooperation	Participants demonstrated excellent collaboration skills, with each individual taking an active role in group discussions and assignments. They support each other, share ideas, and provide constructive feedback to each other. This conducive collaborative atmosphere is clearly visible when they succeed in solving practical challenges efficiently and creatively. Each member of the group seemed to value the contributions of his or her peers, which created a respectful learning environment. The ability of participants to work together not only increases the effectiveness of the activity, but also enriches the learning experience for all parties involved. This high level of collaboration is an indicator of the program's success in building harmonious and productive working relationships among participants.
Application of material	Participants demonstrated excellent abilities in applying the material provided regarding self-massage techniques to overcome post-exercise fatigue. Each participant seemed able to follow instructions precisely and apply massage techniques with confidence and precision. The athletes successfully mastered and practiced the self-massage method taught, showing a deep understanding of the right massage points and how to perform an effective massage. Implementation of this massage technique appeared to have a positive impact, with participants reporting reduced levels of fatigue and increased body fitness after exercise. This success shows that the training material was delivered effectively and participants were able to internalize and practice the knowledge they received well.
Skills acquired	Participants showed significant skill improvements in self-massage techniques to overcome post-exercise fatigue. In practical sessions, athletes are able to apply massage techniques with extraordinary precision and skill. They successfully identify and massage the right points on the body, and apply appropriate pressure to achieve optimal results. Each participant demonstrated a deep understanding and excellent practical ability in performing self-massage, which was reflected in positive feedback and reduced complaints of fatigue after practice. This improvement in skills shows the effectiveness of the training and the participants' readiness to independently integrate self-massage techniques into their recovery routine.
Response to questions	The response rate of participants to questions was very good. The athletes actively asked relevant and in-depth questions regarding the self-massage techniques presented. Each question was answered attentively, demonstrating a high level of participant curiosity and engagement. The instructor also provided clear and detailed explanations, which further enriched the participants' understanding. The discussions were very interactive, with many participants contributing and sharing personal experiences regarding post-exercise recovery.

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The participants' quick and precise responses reflect a good understanding of the material presented as well as a strong desire to implement self-massage techniques in their routine. This success shows that the training has created a dynamic and supportive learning environment.

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Field observations provide an overview of locations that are suitable for use as places for community service. Field observations play an important role in determining the most suitable location for implementing Community Service, because through field observations, implementers can obtain a clear and detailed picture of the physical and social conditions of the prospective location. This procedure allows the team to evaluate available facilities, accessibility, and the specific needs of the local community. In addition, field observations help in identifying potential obstacles and opportunities that may not be visible in initial planning, so as to adjust training implementation approaches and strategies. By thoroughly understanding the field context, the team can design programs that are more relevant, effective and sustainable, ensuring that the self-massage training provided is truly beneficial for the participating athletes.

Coordination with administrators in Community Service is very crucial to ensure alignment between program objectives and the real needs of the community served. Through effective coordination, service providers can access important information regarding the organizational structure, resources and policies that apply at the activity location. This also makes it possible to build good relationships with key parties, obtain logistical support, and identify potential challenges that may be faced. By establishing strong communication with the management, service programs can be designed and implemented more efficiently and effectively, maximizing the expected positive impact on the community and ensuring that all aspects of activities run in accordance with the expectations and standards set.

Focus Group Discussions (FGD) with administrators in Community Service are very important to integrate local perspectives and needs into program planning and implementation. Through FGDs, the service team can gain in-depth insight into the challenges and expectations of administrators and community members who will be served, so they can adapt training materials and methods to make them more relevant and impactful. These discussions also strengthen cooperation and build a sense of shared ownership of the program, ensuring that all parties have the same understanding and commitment to the goals to be achieved. By involving administrators in this process, programs can be designed in a more focused manner, minimizing the potential for conflict, and increasing the chances of success in providing maximum benefits for participants.

The implementation of this training is based on previous trainings with the theme Sport Massage in the aspect of injury prevention (Nasution, 2023), overcoming Delayed Onset Muscle Soreness (DOMS) (Refiater & Haryanto, 2022), injury management (Ita et al., 2022), even injury rehabilitation (Yuliawan & Indrayana, 2021). Meanwhile, reference sources for self-massage were taken from articles discussing self-massage for rehabilitation of Plantar Fascia injuries (Jayadi et al., 2021), improving motor skills (Pavlović et al., 2022) and several sources from related websites (Runner's World, 2009). These sources must be relevant to the theme of this service.

Through this evaluation, training effectiveness is measured, strengths and weaknesses are identified, and constructive feedback is obtained from participants and administrators. This process allows for an in-depth assessment of how the materials and methods used impact the final outcome, as well as uncovering areas that need improvement to improve the quality



of the program in the future. The previous service also strengthens that with a method like this, participants will be able to understand and also be able to do the massage themselves (Komang Ayu Tri Widhiyanti et al., 2021; Muchamad Samsul Huda et al., 2022). With objective and comprehensive evaluation results, programs can be optimized to better meet community needs, ensuring that each activity makes a real and sustainable contribution to the development of the community served.

### **Conclusion**

The self-massage training carried out in Gorontalo City was proven to be effective in improving the skills and knowledge of athletes and coaches in dealing with post-training fatigue. The results of the training showed very satisfying participation, productive collaboration, and good application of the material by the participants. The self-massage technique taught was successfully implemented effectively, providing a positive impact on reducing fatigue and increasing the participants' body fitness.

### **Recommendation**

In the next step, it is recommended that participants regularly integrate self-massage techniques into their recovery routine to get maximum benefits. Additionally, holding follow-up sessions or refresher courses will help ensure that participants continue to practice the techniques they have learned and update their knowledge. From a theory development perspective, further research needs to be conducted to evaluate the effectiveness of self-massage techniques in different contexts, such as different types of sports or varying exercise characteristics. This research may lead to the development of a new, more comprehensive theoretical model of the influence of self-massage on athlete recovery. In terms of community service, it is recommended to create sustainable programs that involve sports communities in other regions and offer advanced training with additional recovery and injury prevention techniques. Collaborations with educational institutions or health institutions can also expand the impact of programs and improve the quality of training, by integrating academic knowledge and clinical practice. Through implementing these suggestions, self-massage training programs can provide broader and more sustainable benefits for athletes and coaches, as well as contribute to the development of knowledge and best practice in the field of sports medicine.

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