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Sports Massage Service for Central Java Pencak Silat Regional Training Athletes in Efforts to Reduce Pain and Maximize Recovery After Intense Training

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Abstract: Pencak Silat is a traditional sport that requires intense training to achieve maximum performance. Central Java's Pencak Silat Regional Training athletes undergo intensive training, often resulting in injuries. Injuries occur due to poor physical recovery and the absence of therapists to expedite the recovery process. Group 142 students from the UNS MBKM Community Service program established a Sports Massage Service to accelerate recovery after intense training. This program was implemented at the Central Java Pencak Silat Regional Training Athlete dormitory in Semarang, Central Java, specifically in Patemon village, Gunung Pati district. The service aims to provide massage services that can alleviate muscle fatigue, reduce pain, decrease the risk of injury, and maximize recovery. The method used is Asset Based Community Development (ABCD). The service involved direct observation of 11 athletes and interviews with coaches. The results indicated a reduction in the average pain intensity from 5.64 to 2.73, with an average decrease of 2.91. The figure of 2.91 indicates that the pain is in the mild category. The impact of this service is reduced pain and more optimal recovery for the Central Java Pencak Silat Regional Training athletes in preparation for the Adult National Championship Pre-National Sports Week (PON). The results of this activity demonstrate that the sports massage service is effective in maximizing recovery and reducing pain after intense training.
Keywords: athlete; pencak silat; sports massage; post-training recovery

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INTRODUCTION

Sports Massage is a manipulation technique using hands to stimulate, relax, and reduce tension and fatigue in athletes engaged in sports activities. Sports massage can be given to anyone, whether old or young, male or female (Fazeli et al., 2020). Moreover, sports massage can also reduce pain (Nhan, 2007). Injuries impact emotional responses such as frustration and anger, so recovery will also affect a person's psychology (Arvinen-Barrow & Walker, 2013). The risk of injury can lead to repeated injuries with a greater likelihood (Dekker et al., 2017). Injuries

can cause pain due to excessive training load, resulting in muscles and bones no longer being in their anatomical state (Askenberger et al., 2018). Risks in sports must be carefully considered as they represent common possibilities or tendencies towards hazards that cause direct or indirect injuries to the participants (Young, 2019).

Sports massage is becoming increasingly popular and is widely used to improve performance, combat fatigue, and facilitate recovery (Brilian et al., 2021). Sports massage has become essential to competitive sports (Kellmann et al., 2018). It is a complement and a fundamental element in enhancing athlete performance (Brilian et al., 2021; P. et al., 2005). Sports massage aims to maximize recovery and prevent injuries, especially in Pencak Silat, which involves high physical contact, intense activity, and a high risk of injury (Hidayatullah et al., 2021; Sharma et al., 2021). Pencak Silat is conducted at regional, national, and international competition levels. Pencak Silat requires rigorous and intensive training as athletes compete at high levels. Therefore, optimal physical care and recovery are crucial for the Central Java Pencak Silat regional training athletes.

Based on observations, problems include lack of rest and excessive training loads leading to injuries. Declining performance, muscle fatigue, and even injuries often become obstacles in an athlete's career (Latif et al., 2022). Injuries occur due to poor physical recovery and the absence of masseurs to aid faster recovery. In line with the aforementioned issues, group 142 students from the UNS MBKM Community Service program provided services to maximize and reduce the intensity of pain post-intense training with sports massage.

Sports massage is an appropriate solution to reduce pain intensity and maximize recovery for the Central Java Pencak Silat Regional Training Athletes during their Training Center (TC) in Semarang, Central Java. This student community service program aims to provide quality sport massage services to the Central Java Pencak Silat regional training athletes. Thus, this service is expected to help reduce pain and maximize recovery after intense training, reduce the risk of injury, and help athletes achieve their best performance overall.

This service program is expected to benefit the Central Java Pencak Silat regional training athletes significantly. Physiologically, massage has been proven to reduce heart rate, increase blood pressure, improve blood and lymph circulation, reduce muscle tension, increase joint range of motion, and reduce pain (Fazeli et al., 2020). With this theoretical foundation, this service program is important as it meets the needs of the Central Java Pencak Silat regional training athletes. The results of this service program can become a positive activity to reduce pain, maximize recovery post-training, and reduce the risk of injury to the athletes.

METHOD

The method used is Asset-Based Community Development (ABCD). This method focuses on understanding, internalizing, and independently and maximally utilizing assets, potential, and strengths (Mcknight, 2017). The sports massage service is in Patemon Village, Gunung Pati District, Semarang City, Central Java. The main target of the sports massage service activity is all 11 Central Java Pencak Silat regional training athletes. The equipment provided for this activity includes mats, head pillows, massage cream, hand body lotion, massage oil, tapping, tensocrepe, and towels, while the materials needed include a guide on various massage manipulation techniques, injury massage therapy, and sports injury management.

Activity Implementation Stages

1. Initial Preparation Stage
   The preparation stage aims to prepare the equipment and proper

setting for handling athlete massages. Students conduct observations at the regional training dormitory to gather comprehensive information. Instructors provide guidance and techniques used in massage handling and provide test and measurement instruments. Additionally, the instructor socializes with the athletes about recovery management to improve performance.

2. Direct Observation Stage with Athletes and Coaches
   This stage involves direct observation while the coach delivers training material, demonstrates movements, and instructs the athletes. Observations include athletes' activities, from warm-up to core training to cool-down and completion.
3. Interview Stage with Coaches and Athletes
   This stage involves communication with coaches to understand the athletes' conditions and injury history. In-depth interviews are also conducted with the athletes. The service activity involves KKN students providing sports massage services. The success indicators for this service are measured by interviewing athletes about their physical condition changes before and after receiving massage manipulation aimed at reducing pain, muscle fatigue, injury healing, and accelerating recovery.
4. Evaluation Stage
   Evaluation is conducted through interviews with athletes regarding the movements they can perform post-therapy. The tool used to measure pain intensity is the Numerical Rating Scale (NRS) (Figure 1). This assessment uses a more formal tool (Andarmoyo, 2013). The NRS consists of a horizontal line evenly divided into ten segments from 0 to 10. The usage involves the masseur pressing the body part where the athlete feels pain, and the athlete is asked to mark the number they feel most accurately describes their pain level at a given time. The description is that 0 indicates "no pain at all", and 10 indicates "the worst pain imaginable." The assessment is conducted before and after the treatment.

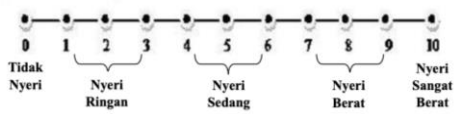

Figure 1 Numerical Rating Scale (NRS) Andarmoyo (2013); Nielsen et al., (2022)

RESULT AND DISCUSSION

Based on direct observations of athletes and coaches and interviews with the Central Java Pencak Silat regional training coach conducted by 13 students from Group 142 of the UNS MBKM KKN, data was collected on 11 athletes from the Central Java regional training. Each student handled one athlete, while two additional students monitored each activity. The massage service was provided for 30 minutes with light to moderate pressure thrice a week. The patient data identified that the athletes experienced muscle fatigue in the arm, back, hip, waist, and leg muscles, with muscles often feeling stiff. The theoretical knowledge and practical experience in sports massage obtained from the courses at the Faculty of Sports, UNS, served as a guide for the students to implement their learning outcomes with the Central Java Pencak Silat regional training athletes in Patemon Village, Gunung Pati District, Semarang City, Central Java, under the theme "Assisting the Central Java Pencak Silat Regional Training Camp". The results showed that athletes were enthusiastic about maximizing recovery after intense training. The sequence of service activities included direct patient interviews, providing sports massage services, documentation, and a closing session. Below are the types of

manipulation techniques used in sports massage (Table 1).

Table 1 Sports massage service practice plan

Body Position	Massage Area	Manipulation Types
Prone	Legs and feet	Shaking, stroking, Kneading 1, Kneading 2, Kneading 3, Muscle Squeezing, Picking up, Hacking, Friction, Effleurage.
	Back	Shaking, Stroking, Kneading 1, Kneading Putar, Friction, Clapping, Beating, Digiting, Skin Rolling, Effleurage.
Supine	Legs and feet	Stroking, Friction.
	Arms and hands	Shaking, Stroking, Kneading 1, Kneading 2, Hacking, muscle Squeezing, Friction, Effleurage.
	Chest	Stroking, kneading Putar
	Abdomen	Stroking
	Waist	Wringing

The sport massage service practice plan was designed as a reference for KKN students in providing quality sport massage services to the Central Java Pencak Silat regional training athletes. It aims to enhance the athletes' health recovery, stamina, and stability. The implementation was carried out in each athlete's room to ensure optimal and effective handling.

Implementing this sports massage service activity can inspire coaches and therapists to play a central role in designing and implementing sports massage programs that cater to the individual needs of athletes. Athletes' desire to learn about sports massage techniques and sports injury massage is also crucial, as they can actively contribute to their recovery process. Below are the results of the initial and final tests using the NRS on the condition after sport massage treatment (Table 2).

Table 2 Pain Intensity Measurement using NRS

Athlete	1	2	3	4	5	6	7	8	9	10	11	Average
Pretest	5	6	6	5	7	5	6	6	5	6	5	5.64
Posttest	2	3	2	3	3	3	3	3	2	3	3	2.73
Average Pain Reduction												2.91

Table 2 shows that the average pain intensity decreased from 5.64 to 2.73, with an average reduction of 2.91. A score of 2.91 indicates that the pain falls into the mild category. According to Benjamin and Lamp (1999) in their book Understanding Sports Massage, massage refers to the systematic manipulation of the body's soft tissues for therapeutic purposes. Sports massage is applied to maximize recovery, reduce pain, prevent injuries, and help improve athlete performance.

Sports massage is a crucial element in training. It maintains, and restores weakened physical conditions by stimulating organ function (Fazeli et al., 2020). During this regional training period, students can provide support by offering sports massage services to keep athletes' physical conditions fit, stable, and optimal in preparation for the National Qualification Championship. Sports massage plays an important role in alleviating fatigue and can restore physical conditions so athletes can engage in subsequent activities without experiencing fatigue (Brilian et al., 2021).

Massage Manipulation Techniques Used by Students Include: (1) Stroking: A manipulation technique involving

rubbing with the entire hand surface or fingertips. (2) Kneading: A manipulation technique performed by pressing with the entire palm, thumb, and fingers perpendicular to the underlying tissue. (3) Muscle Squeezing: A technique involving gently holding, squeezing, and pressing softly towards the venous blood flow. (4) Picking-Up: A technique that involves grasping as much tissue as possible, lifting it perpendicularly, and pressing it down without releasing the grip. (5) Wringing: A technique involving pushing and pulling the tissue until it folds. (6) Skin Rolling: A technique involving grasping the skin tissue and pushing/rolling it forward with both thumbs, creating a gliding movement. (7) Hacking: A massage manipulation technique involving gentle strikes across the muscle fibres. (8) Clapping or Cupping: A manipulation technique involving a series of slaps on the superficial body tissues. (9) Beating: A technique similar to clapping but performed with relaxed, clenched fists, done slightly slower than hacking and clapping, with relaxed wrist flexion and extension movements. (10) Finding/Digiting: A technique similar to clapping, performed with open fingers. The execution is the same as clapping and beating. (11) Friction: A manipulation technique involving small and deep pressure on body tissues to prevent and eliminate thickening and adhesion. (12) Effleurage: A massage manipulation technique involving rubbing movements towards the heart along the direction of venous blood and lymphatic flow, also known as stroking or soothing massage. Sports injury massage services are documented in Figure 2.

Figure 2 Sports injury massage service

Injuries among athletes often occur due to high-intensity training. This happens because they do not warm up regularly during high-intensity training, so the muscles' capabilities are not optimal. Athletes commonly experience injuries due to improper warming up during intense sports activities. This often occurs during weight training, field exercises, or sports competitions. Common injuries include ankle, knee, shoulder, and hip injuries.

The Sports Massage Service method also addresses injury treatment. Here are some steps implemented in the sports massage service for injured Pencak Silat athletes of the Central Java Training Center: (1) Injury Evaluation: The first step in the massage service is to evaluate the injury. This is done by a trained masseur who will assess the type and severity of the injury. This evaluation is crucial for determining the most appropriate treatment approach. (2) Injury Treatment: After evaluation, the therapist will provide direct treatment for the injury. This may include techniques such as massage, warming and cooling, muscle recovery, or other specific physical therapies. The goal is to reduce pain and inflammation and heal damaged tissues. (3) Relaxation Massage: Relaxation massage is essential to the treatment. It aims to help athletes relax and reduce muscle tension. This massage also improves blood circulation, which can help remove toxins from the body. (4) Stretching:

Stretching helps to lengthen tense muscles and maintain flexibility. This is important to reduce pain, maximize recovery, and prevent injuries.

After intense training, sports massage service is crucial in reducing pain and maximizing recovery for Pencak Silat athletes at the Central Java Training Center. With faster recovery, athletes can return to training quickly and minimize the risk of prolonged injuries (Fazeli et al., 2020). Some main benefits of sports massage services for athletes include: (1) Pain Reduction: Proper massage and treatment can reduce pain from injuries. (2) Maximizing Recovery: Enhancing flexibility. (3) Reducing Muscle Tension: Accelerating recovery after intense training. (4) Improving Blood Circulation: Helping repair damaged tissues and reducing inflammation. (5) Enhancing Sleep Quality: An important factor in effective recovery (Fazeli et al., 2020).

This service program is based on several related theories and concepts, including (1) Post-Training Recovery: Concepts of recovery after intense training, recovery techniques, nutrition, and physical recovery techniques. (2) Sports Massage: Basic principles of sports massage, effective techniques, and its benefits in athlete recovery. (3) Sports Injuries: Causes of sports injuries, signs, and prevention strategies.

CONCLUSION

The Sports Massage service is essential in training Pencak Silat athletes at the Central Java Training Center. With a better understanding of the importance of sports massage, collaboration between coaches, masseurs, and athletes can maximize recovery, reduce pain, and enhance performance. This also fosters a healthier and more sustainable sports culture.

The primary benefits of the sports massage service for Pencak Silat athletes in Central Java include: Athletes receive direct benefits in the form of better recovery after intense training, which helps them train consistently and effectively. Proper sports massage can minimize the risk of injuries, allowing athletes to train without fear of injury.

This service is an effective tool for maintaining the health and performance of Central Java's Pencak Silat athletes. However, it is important to remember that this treatment should be administered by experienced and trained masseurs to avoid the risk of additional injuries. Additionally, maintaining fitness and preventing injuries should remain a primary focus in athletes' training programs. Therefore, it is crucial to continue supporting and integrating sports massage into sports training programs throughout Indonesia.

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