The Effectiveness Of Sports Massage On Ankle Injury Rehabilitation In East Java SMANOR Athlete

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ABSTRACT

The purpose of this study was to find out how effective Sports massage Effriction therapy is for ankle injury rehabilitation, ankle injuries can be one of the things that bother students, but in SMANOR there are currently supporting health services such as mass services, some students who have ankle injuries they say that the handling of massage with the methods applied at UPT SMANOR JATIM still does not bring significant results, they said that they still felt pain, and in terms of range of motion still could not be moved optimally so that it affected the quality of school and the training they underwent, The design of this study used a quasi-experimental design, The subjects in this study amounted to 32 patients taken from SMANOR JATIM students who had ankle injuries with a population of 160 students. The data collection technique used is to use the Visual Analogue Scale (VAS) instrument as a way to measure pain before treatment and after treatment. It then uses a goniometer to measure the range of motion of the flexion-extension ankle before and after treatment. The data processing technique in this study uses computational calculations of the SPSS (Statistical Product and Service Solution) Version 26.0 program. Sports massage therapy is effective in improving ankle ROM. Expressed significantly seen from the value of t in the flexion movement of 14.576 mean of 8.878. In the extension movement, the t value of 19.471 is the mean of 12.324. Physiologically, the treatment of massage therapy is useful for reducing inflammation and increasing ROM. (2) Sports massage therapy is effective in reducing pain in ankle injuries. This can be stated as significant as seen from the t value of 17.676 with a mean of 5.780. Physiologically, treatment of sports massage therapy can reduce inflammation and pain in ankle injuries. This study concludes that the treatment of sports massage is effective in dealing with ankle injuries and effective in reducing pain in athletes who experience ankle injuries at SMANOR East Java.

Keywords: Massage; Ankle Injury; Rehabilitation.

INTRODUCTION

In the world of education, all related people ranging from teachers, students, staff and employees have the desire to live healthily (Priyambada & Kusumawati, 2018). Because with that health, they can all carry out daily activities with so much enthusiasm.
Health affects the performance of every human being (Junaidi et al., 2017). Every human being will always strive to be able to maintain and improve the health and fitness of his body (Satya Graha, 2015). There are various ways to be able to make that happen, one way is to exercise because of its many benefits (Korompis et al., 2018). The benefits of exercise according to (D. Agus, 2010) are a. increasing the ability of the heart and lungs, b. strengthening joints and muscles, c. lowering blood pressure, d. reducing fat, e. improving body shape, f. improving blood sugar levels, g. facilitating blood flow, h. slowing ageing (Azriani, 2019). Given the impact quite a lot on humans, people should realize how important it is to do sports activities, on the other hand after humans exercise will feel tired (Sari et al., 2018), so to restore the condition of the body can use massage or massage (Kamadi et al., 2019). At this time which is included in the modern world, massage developed into one of the modern treatments and included in manual therapy (Prastya et al., 2019). The development of this massage was carried out by a physiologist from Sweden, namely Pehr Henrik Ling (1776-1839). Until the early 19th century Ling used a combination of gymnastics, exercises and manual therapy in developing what until now is called the Swedish Movement System which initiated the continuous development of manual therapy in America both traditionally and non-traditionally (Field, 2002; Alimuddin & Mulyaningsih, 2019).

According to (Alhadi., 2020) massage can restore the condition of the body after physical activity. Massage is a skill that involves elements of scientific knowledge based on valid sources of knowledge (Samsudin, 2019). Massage is a manipulation of body tissues done by hand (I. R. R. Putri, 2019). Massage will affect the nervous system, muscles, and blood circulation (Suyudi et al., 2022). A good and proper massage will help reduce the attachment of muscle fibres and move the fluid buildup obtained from increased lactic acid (Fondy, 2022). This can be obtained through official (licensed or certified) and unofficial (experienced) education channels (Kusuma & Anhar, 2020). Being a masseur or masseur commonly referred to as a masseur must have knowledge that can be accounted for and also have experience or flight hours that can support skills as a masseur or masseur (Abdillah & Suwandi, 2020). Some of the abilities to become a masseur or masseur among them can be solving problems by diagnosing the patient's condition (Sahabuddin, 2022) and having solutions on how to handle it and many other supporting things that help the success of massage (E. C. Putri, 2020). Masseurs or masseurs must learn and continue to learn about various massage handling methods, basic massage techniques, human body
anatomy, physiology and other things to support the success of massage services in the future (Drifanda et al., 2020).

(Fondy, 2022) masseurs are needed for every human circle, whether for the general public or sportsmen. From the observations of researchers during their time as masseurs until now (Amin et al., 2021), most athletes or sportsmen who become patients still do not understand how to handle and care for their limbs when they are injured (Pratama et al., 2020). When I ask them about the injuries they have experienced and what kind of treatment, they tend to come to massage places that have not been proven in quality and knowledge so that the patient's condition cannot be said to be cured and some even worsen (Ari Wibowo, Kurniawan, 2021). Whereas in theory when we experience injuries there are several handling and treatment methods that we can learn and practice at home, namely the RICE method, cold method, hot method, hot and cold method, water spray and proper massage (Fondy, 2022).

The competitiveness of marketing efforts, especially in the field of mass services, has now experienced significant development. Massage is now increasingly supported by special theories (such as basic massage techniques, understanding related to human anatomy, and theories of handling and preventing injuries) as an effort to support a health service. What is of special concern is UPT SMANOR JATIM, in this school students play an active role as an athlete, and most of the individual sports are found in this school, many achievements have been carved by SMANOR students ranging from the Regency, Province, National and even International levels.

Over time the services in the school have also increased, one of which is that there are already mass service facilities as a means to support students, according to some students, ankle injuries are injuries that are often experienced by them, especially martial arts sports such as Pencak Silat, Wrestling, Judo, Karate, Taekwondo which have a higher risk of collision or physical contact among other sports, this is true. The ankle is a part that is often injured because it is not too strong to do medial, lateral, pressure, and rotational movements, this is also the greater risk when the muscles weaken or when there is pressure, or excessive impact from outside (Sumartiningsih, 2012; Amroellah & Santoso, 2022).

There are many types of injuries, but injuries to the ankle can be one of the things that disturb students, SMANOR there are currently health services that support such as mass services, but according to some students who experience injuries, especially in the ankle or ankle they say that the handling of massage with the methods applied and carried
out at UPT SMANOR JATIM still does not bring such results significantly, they said that they still felt annoying pain, and in terms of the range of motion still could not be moved optimally so that it affected the quality of school and training they underwent.

Therefore, the author will introduce and research massage services that are currently being run as one of the businesses in the field of health services, namely the application of Sports Massage with the Massage Effriction method in Jember. According to the author, this Massage method has the advantage that it is more practical in handling, only releasing muscle spasms and then traction is carried out at the end. Every method or application of a technique will certainly have disadvantages and advantages, the disadvantage of this method is that there is no recent research or journal that makes this method known, therefore researchers want to make this research one of the new methods to be known to many people and useful for everyone. The advantage of this method is that it is easy to understand, the movement is principled in muscle relaxing, namely release spasm (muscle tension) with muscle points that are easily accessible then in the final stage traction (withdrawal) is carried out.

Massage is believed to stimulate sensory receptors and has shown some evidence (Ilahi et al., 2022), namely increased torso, decreased muscle stiffness by reducing neuroparasympathetic activity, able to reduced fast heart rate, and decreased muscle stimulation as measured by decreased blood pressure (Weerapong, P., Hume, P. A., &; Kolt, 2005). In every complaint of ankle injuries handled, most get positive results, therefore the author as a masseur wants to apply this Massage method following the ability, knowledge and experience gained to date. The author will research "The Effectiveness of Massage Against Ankle Injury Rehabilitation". Following research has been conducted that this massage therapy can reduce pain and significantly increase joint range of motion with an effectiveness of 57% and 24.1% (Mahesvi, 2021).

(Setiawan, 2020; Akhmad et al., 2021) Effriction is a combined movement between Efflurage and Friction. According to the general combination of manipulation movements Efflurage and Friction have benefits to facilitate blood flow (Yuliawan & Indrayana, 2021; Pasek et al., 2022; Juliansyah et al., 2022), help improve metabolic processes, relax muscles and reduce pain. (Hernowo, 2018; Mega Widya Putri et al., 2021; Yanti & Saputri, 2022; Ita et al., 2022)

The strong reason why this study was conducted was to provide education on how to handle and treat injuries appropriately, lest active students as athletes do the wrong handling, especially in the problem of massage which is one alternative way to deal with
injuries. This study will also explain how to deal with injuries through the massage method that will be carried out. The massage method that will be carried out in this study is easier to understand and practice so that it can be accepted by the general public both for the general public, sportsmen and even athletes.

METHOD

This research uses a quantitative approach that is descriptive while the type of research used is descriptive quantitative research. This study illustrates the effectiveness of Effriction massage on ankle injury rehabilitation. This research design uses a quasi-experimental design. The experimental research used was quasi-experimental consisting of two research groups, namely the experimental group with the treatment of the application of Sports Injury Massage and the control group. The form of Quasi experiment design used is Non-Randomized Control Group Pretest-Postest Design.

The subjects in this study amounted to 32 patients taken from SMANOR JATIM students who suffered ankle injuries with a population of 160 students. The subjects of this study consisted of male and female genders with the category of adolescent/high school-age athletes. Determination of this research sample using the Purposive Sampling method. Researchers will use. Purposive sampling (Ali maksum, 2012) explains "Purposive sampling or purposeful sample, is a sampling technique whose characteristics or characteristics are known in advance based on the characteristics or characteristics of the population". So purposive sampling is a sampling method that is not random, but the sample is selected based on the purpose and carried out because of certain considerations. Sample determination will use the Slovin formula. Determination using the Slovin formula was carried out to determine the number of samples from known populations (Sugiyono, 2014).

The data collection technique used is to use the Visual Analogue Scale (VAS) instrument as a way to measure pain before treatment and after treatment. It then uses a goniometer to measure the range of motion of the flexion-extension ankle before and after treatment. For the last in terms of satisfaction use a questionnaire instrument in the form of a Likert scale after being given treatment.

The data processing technique in this study uses computational calculations of the SPSS (Statistical Product and Service Solution) Version 26.0 program.
RESULTS AND DISCUSSION

Analysis of research results will be associated with research objectives, so it can be described with data descriptions and hypothesis testing results. The description of the data that will be described and explained in the form of pretest-posttest result value data obtained from the initial test and final test, along with the results of the pretest-posttest data description:

Table 1.
Data description

<table>
<thead>
<tr>
<th>Pretest-Posttest</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nyeri Pretest</td>
<td>32</td>
<td>6</td>
<td>9</td>
<td>7.66</td>
<td>.971</td>
</tr>
<tr>
<td>Nyeri Posttest</td>
<td></td>
<td>0</td>
<td>2</td>
<td>.75</td>
<td>.672</td>
</tr>
<tr>
<td>ROM Flexsi Pretest</td>
<td>32</td>
<td>5</td>
<td>15</td>
<td>9.75</td>
<td>2.664</td>
</tr>
<tr>
<td>ROM Flexsi Posttest</td>
<td></td>
<td>19</td>
<td>20</td>
<td>19.97</td>
<td>.177</td>
</tr>
<tr>
<td>ROM Ekstensi Pretest</td>
<td></td>
<td>10</td>
<td>25</td>
<td>17.66</td>
<td>5.498</td>
</tr>
<tr>
<td>ROM Ekstensi Posttest</td>
<td></td>
<td>35</td>
<td>40</td>
<td>39.56</td>
<td>1.216</td>
</tr>
</tbody>
</table>

Based on the table above, the pretest measurement results on pain averaged 7.66 with std. deviation of .972, while on post average of .75 with std. The deviation is .672. While in the pre-Romflexsi there was an average value of 9.75 with std. deviation of 2.664 and in the average post-Romflexsi of 19.79 with std. 177, in the Romextension the average value of pre was 17.66 with std. deviation of 5.498 while the average post was 39.56 with std. deviation of 1.216.

From the results of the description analysis, it can be concluded that giving time to ankle injury students can speed up the recovery of ankle injuries, this can be seen in the average pretest-posttest results in each group.

ROM Preloaded Test Analysis Results

Table 2.
ROM Normality Test Results

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Sig.</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROM Flexsi Pretest</td>
<td>0.570</td>
<td>Normal</td>
</tr>
<tr>
<td>ROM Flexsi Posttest</td>
<td>0.413</td>
<td>Normal</td>
</tr>
<tr>
<td>ROM Ekstensi Pretest</td>
<td>0.679</td>
<td>Normal</td>
</tr>
<tr>
<td>ROM Ekstensi Posttest</td>
<td>0.770</td>
<td>Normal</td>
</tr>
</tbody>
</table>

Table 3.
ROM homogeneity test results

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Levene Statistic</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROM Flexsi Pretest</td>
<td>1.740</td>
<td>0.370</td>
</tr>
<tr>
<td>ROM Flexsi Posttest</td>
<td>0.527</td>
<td>0.787</td>
</tr>
<tr>
<td>ROM Ekstensi Pretest</td>
<td>0.548</td>
<td>0.600</td>
</tr>
<tr>
<td>ROM Ekstensi Posttest</td>
<td>0.314</td>
<td>0.637</td>
</tr>
</tbody>
</table>
Table 4.
Results of t-Test Analysis on Ankle Injury ROM

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>t</th>
<th>Sig.(2 tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROM Flexsi Pretest - Posttest</td>
<td>8,878</td>
<td>14,576</td>
<td>0.000</td>
</tr>
<tr>
<td>ROM Flexsi Pretest - Posttest</td>
<td>12,324</td>
<td>19,471</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Based on the table above, the results of statistical analysis using the Paired Samples t Test, the significant value of ROM in ankle injury is 0.000 (p<0.05).

Preloaded Test Results on VAS

Table 5.
Pain scale normality test

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Sig.</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain Pretest</td>
<td>0,127</td>
<td>Normal</td>
</tr>
<tr>
<td>Pain Posttest</td>
<td>0,072</td>
<td>Normal</td>
</tr>
</tbody>
</table>

Table 6.
VAS homogeneity test

<table>
<thead>
<tr>
<th>Variabel</th>
<th>Levene Statistic</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain Pretest</td>
<td>1,732</td>
<td>0,327</td>
</tr>
<tr>
<td>Pain Posttest</td>
<td>0,754</td>
<td>0,475</td>
</tr>
</tbody>
</table>

Table 7.
Results of t-Test Data Analysis on VAS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>t</th>
<th>Sig.(2 tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain Pretest - Posttest</td>
<td>5,780</td>
<td>17,676</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Based on the table above, the results of statistical analysis using the Paired Samples t Test, the significant value of the pain scale in ankle injury is 0.000 (p<0.05).

Discussion

The main purpose of this study was to determine how effective Sports massage Effriction therapy is for ankle injury rehabilitation in East Java SMANOR athletes. The results of data analysis using statistical analysis (Paired Simple t Test). This study shows that the significance value in the data is (p < 0.05) or there is a significant difference between the pretest and posttest.

The success rate is shown by increased ROM and reduced pain felt by athletes after receiving treatment with Sports massage Effriction therapy. This is following what was revealed by (Mehdi &; Hafidz, 2015) the treatment of massage in the implementation of recovery with proper handling, namely after doing intensive combination exercises has a good effect on short-term recovery. The provision of Sport massage Effriction therapy treatment is given when patients or athletes who experience injuries experience impaired
function of ankle ROM. This injury is usually followed by inflammatory signs. Signs of inflammation are characterized by the appearance of red (rubor) in the area of injury, swelling (tumor), heat (heat), pain (dolor), and impaired function of the ankle joint and its supporting muscles.

There are several types of injuries found in the ankle, both those that occur in muscles, ligaments, and bones and joints. The injury that hit the supporting muscle among Him was the ankle strain. While injuries that hit the ankle ligaments are often called ankle sprains. According (Anderson, M. K., Parr, G. P., Hall, 2009) ankle sprain injuries can occur in basketball more than 45%, and in football sports up to 31%. This is very influential in allowing ankle sprain injuries to occur in sports with high impact. The ligaments most commonly affected by sprains or ankle ligament tears include the anterior talofibular ligament (ATFL) and calcaneofibular ligament (CFL). There are also three classifications of this injury, namely Grade I, Grade II, and Grade III. If the injury is severe enough, it will be accompanied by a dislocation of the joint.

The effects that occur when an injury to the ankle occurs are swelling and pain. The metabolism in the area of injury will also increase which gives rise to the body's response to produce more and more fluid buildup of compounds to the area of injury that intends to heal. This if left too long will cause limited joint space or ROM from the ankle. Treatment that can be done is by doing the RICE method, which is a compress using ice which aims to reduce the vasodilation process that occurs after injury. Other treatments that can be done afterwards are to use of therapeutic manuals (massage) and exercise therapy.

Manual therapy using massage therapy is part of the healing process. According to (A. Agus, 2010) explained that Frirage massage therapy is a massage therapy carried out for health and healing from injuries and other body parts. This massage therapy is a mass manipulation technique that combines friction techniques with efflurage techniques that use the thumb to relieve muscle tension. After that, the withdrawal (traction) and return (repositioning) of the ankle joint according to its position are carried out. This is corroborated by research (Myers et al., 2008) which explains that mass therapy treatment (friction technique) is significantly proven (p value< 0.05) in overcoming Grade II ankle injury, able to improve ROM, muscle strength and balance.

In addition to using mass therapy treatment, in the process of healing and recovering ankle injuries also use strengthening exercise therapy treatment. This therapy is used to improve the ability of muscles and ligaments to receive the resistance provided. The mass therapy program with exercise therapy has a significant effect compared to only
conventional therapy (mass therapy). This will affect the increase in ankle joint strength, increase balance, speed up to return to sport (return to sport) and prevent repeated injuries.

Supporting research is a recent study conducted by Vuurberg et al. (2018) entitled Diagnosis, Treatment and Prevention of Ankle Sprains: Update of an Evidence-Based Clinical Guideline which explains that treatment of ankle injuries using a combination of manual therapy and exercise therapy has significantly better results in improving ROM and reducing swelling.

The results of data analysis in this study showed that sports massage therapy has a significant success rate for increasing ankle ROM and reducing ankle pain. It can be interpreted that effective sports massage therapy can be used in ankle injury recovery programs.

The results of the analysis in this study have been tested hypothetically, among others: (1) sports massage therapy is effective in increasing ankle ROM. Expressed significantly seen from the value of t in the flexion movement of 14.576 mean of 8.878. In the extension movement, the t value of 19.471 is the mean of 12.324. Physiologically, the treatment of massage therapy is useful for reducing inflammation and increasing ROM.

(2) Sports massage therapy is effective in reducing pain in ankle injuries. This can be stated as significant as seen from the t value of 17.676 with a mean of 5.780. Physiologically, treatment of sports massage therapy can reduce inflammation and pain in Ankle injuries.

CONCLUSIONS AND SUGGESTIONS

Conclusion

Overall this study can draw conclusions

1. The treatment of sports massage is effective in dealing with ankle injuries in SMANOR East Java athletes.
2. Sports massage treatment is effective in reducing pain in athletes who have ankle injuries in SMANOR East Java.

Suggestion

Based on the results and conclusions of this study, researchers provide some suggestions as follows:

1. Athletes who experience ankle injuries can consider choosing a recovery method that will be used in appropriate therapy. Athletes can use a combination of sports massage to treat ankle injuries. Because sports massage has proven significantly
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1. Sport massage is effective in overcoming ankle injuries.
2. For researchers themselves, pay more attention to the samples to be used and the duration of treatment.

REFERENCES


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