

THE INFLUENCE OF INDOONESIAN SPORT MASSAGE TRAINING ON THE KNOWLEDGE AND SKILLS OF SPECIAL SPORTS THERAPISTS

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Abstract: Athletes are state assets, so they need to be handled appropriately to reduce fatigue. Objective: This study aims to provide knowledge and skills in Indonesian sports massage for sports therapists. therapists specifically for sportsmen where the sample was taken using purposive sampling, namely: 1) already have beginner massage skills and have not yet mastered sports massage therapy; 2) have a sports physiologist certificate; 3) have special experience in sports. The sample in this study consisted of 30 specialist sports therapists. Method: used in this research was an experiment using one group pretest posttest with data collection techniques using a Likert scale questionnaire. The instrument in the research uses a questionnaire that has been validated by experts. Research results: after being given 12 training meetings, knowledge and skills results increased by 4.861 and t table (df 28; 5%) 2.048 with a significance p value of 0.000, so it can be interpreted as significant. This means that the conclusion is that the Indonesian sports massage training can increase the knowledge and skills of specialist sports therapists who will then be able to carry out special treatment for athletes in Indonesia.

Keywords: Indonesian Sport Massage, Knowledge, Expertise

INTRODUCTION

Massage has become a necessity in everyday human life, because massage can make people healthy and strong, both physically and spiritually (Kirwa & Nkomesha, 2023; Kusparlina et al., 2023). Massage can also be used as a means to relieve fatigue, of course hoping to achieve comfort in the body (Ismail & Rofi, 2024). On the other hand, an athlete must carry out various learning models regularly and seriously (Songwathana et al., 2023). Additionally, in research (Kim & Yang, 2023) In the process of gaining knowledge, students must be required to carry out practice where this practice requires good physical condition. Sports massage is a type of rehabilitation that has been modified to suit the conditions in Indonesia.

Sports themselves don't seem to cause fatigue, but if you observe them from a standing position, sitting position and during the learning process, you can really see how tired they are. (Kuna et al., 2023). Monotonous activities and activities that require physical and mental walking have a real impact, one of which is fatigue and tension which hinders athletes' performance (Yachsie, Pranata, et al., 2023). Of the most common types of fatigue in athletes, overuse injuries can arise due to constant physical and mental stress (Pensgaard et al., 2023). Fatigue is often experienced by athletes after training in the form of fatigue, muscle aches, muscle cramps, muscle spasms, sprains, strains (Pensgaard et al., 2023). Doing repetitive exercises makes your physical and mental condition not well maintained. So it is necessary to relax the body for students by providing various types of massage manipulation, including sports massage.

There are many ways you can do when you experience fatigue and to speed up recovery after activities, one of which is the massage method (Gavanda et al., 2023). The treatment that is often carried out is sports massage which aims to reduce muscle tension due to activity (Musat et al., 2023). The muscle tension that occurs is influenced by lactic acid in the blood due to the body's process of releasing energy (Edouard et al., 2023). Sports massage is a massage performed by a massage therapist to help speed up the recovery process by using hand touch and without inserting medication into the body with the aim of alleviating or reducing complaints or symptoms of several types of diseases which are indications for massage (Priyonoadi et al., 2018). The goals of hand manipulation techniques (massage) include muscle relaxation, improvement of flexibility, reduction of pain, and improvement of blood circulation (S. Lee et al., 2023; Liu et al., 2023). Sports massage is a type of massage that is used as an alternative to relieve

fatigue and tiredness (Edouard et al., 2023; Hussain et al., 2023; S. Lee et al., 2023; Liu et al., 2023; Priyonoadi et al., 2020; Robergs et al., 2023). This is because sports massage is designed to facilitate blood circulation, especially the encouragement of venous blood to the heart, thus helping to restore and process metabolic waste, in addition to providing muscle and nerve relaxation (Mulyadi & Sartono, 2019). In according to (Ayudi et al., 2022) Sports massage mainstay manipulation techniques are Effluerage, Petrissage, Shaking, Tapotement, Friction, Walken, Efflurage, Vibration. Thus, the aim of this research is to find out the results of providing massage training, namely sports massage specifically for sports therapists.

METHOD

The population in this study were therapists specifically for sportsmen, where samples were taken using purposive sampling, namely: 1) already had beginner massage skills and had not yet mastered sports massage therapy; 2) have a sports physiologist certificate; 3) have special experience in sports. The sample obtained in this study was 30 therapists specializing in sports. The method used in this research is an experiment using one group pretest posttest with data collection techniques using a Likert scale questionnaire. The data collection process is by providing sports massage training. The guidelines for implementing treatment (massage treatment) refer to the FITT (Frequency, Intensity, Time and Type) treatment program as follows.

Table 1. Procedure for Implementing Sports Massage

No	Component	Sports Massage
1	Frequency	1x Treatment
2	Intensity	Pressure adjusts the size or thickness of the outer muscles
3	Time	15 Minutes, Each Manipulation 3-8 Repeats
4	Type	Sports massage techniques: Effluerage, Petrissage, Shaking, Tapotement, Friction, Walken, Efflurage, Vibration

Table 2. Instrument Grid

Variable	Factors	indicators	Expert Number				
			Strongly agree	Agree	Enough	Don't agree	Strongly Disagree
Sports Massage	Knowledge	Know the Sports Massage Procedure	5	4	3	2	1
		Know the history of sports massage	5	4	3	2	1
		The movements carried out are sequential	5	4	3	2	1
		Memorize sports massage techniques.	5	4	3	2	1
	Skill	Memorize sports massage techniques	5	4	3	2	1
		Can do it independently.	5	4	3	2	1
		Not sure about the techniques you have mastered	5	4	3	2	1
		Knowing repetition in sports massage manipulation	5	4	3	2	1
Total			40	32	24	16	8

However, the initial step in providing the material is by presenting the material, then continuing with the demonstration method, where the demonstration is carried out by providing assistance for 2 weeks. In this activity, intensive guidance and assistance is carried out so that the results of the training will be permanent and participants will contribute fully, with the hope that the implementation of this activity can increase participants' knowledge and skills. This means that the pretest data collection process was carried out before giving this sports massage training and the posttest data collection was taken after carrying out and assisting the demonstration for 2 weeks using a questionnaire on the instrument. In this study, the instrument was taken from research (Ashraf et al., 2024; Hamzehnejadi et al.,

2024; Hernández-Sánchez et al., 2024) put together and then used as a tool to measure knowledge and skills in the form of a Likert scale questionnaire, of course this questionnaire has been validated by experts and has been proven to be valid and reliable with a score of 8.876. Following is the instrument grid.

Before testing the hypothesis, it is necessary to test the prerequisites. Testing measurement data related to research results aims to help the analysis to be better. For this reason, in this research, normality and homogeneity tests will be tested, then proceed to the t-test.

RESULTS

The data results in this research are in the form of sports massage knowledge and skills. The results of the knowledge and skills data analysis are: The results of the descriptive statistical analysis of sports massage knowledge and skills in Table 3 are as follows:

Table 3. Descriptive statistics on sports massage knowledge and skills

Statistics	Knowledge	Skills
N	15	15
Mean	168.07	188.40
Media	167.00	185.00
Mode	166.00	183.00a
Std, Deviation	8.43	13.83
Minimum	154.00	168.00
Maximum	181.00	218.00
Sum	2521.00	2826.00

When displayed in the form of assessment norms, sports massage knowledge and skills are presented in Table 4 as follows:

Table 4. Norms for assessing the level of knowledge and skills in sports massage

No	Intervals	Category	Knowledge		Skills	
			F	%	F	%
1	80-100	Very good	0	0.00%	0	0.00%
2	50-79	Good	2	13.33%	11	73.33%
3	30-49	Not enough	13	86.67%	4	26.67%
4	10-29	Very less	0	0.00%	0	0.00%
Amount			15	100%	15	100%

Based on Table 4 above, it shows that the level of knowledge and skills has increased. Based on the average results, it shows that there has been an increase in the knowledge and skills of the training participants. The normality test is intended to determine whether the variables in the study have a normal distribution or not. This normality test calculation uses the Kolmogorov-Smirnov formula. with processing using the SPSS 16 computer program. The results are presented in Table 5 as follows.

Table 5. Summary of normality test results

Fitness	p	sig	Information
Knowledge	0.710	0.05	Normal
Skills	0.062	0.05	Normal

From the results of Table 5 above, it can be seen that the training participants have p (Sig.)> 0.05, so the variable has a normal distribution. The homogeneity test is useful for testing the similarity of samples, namely whether or not the variance of samples taken from the population is uniform. Homogeneity rule if $p > 0.05$. then the test is

declared homogeneous, if $p < 0.05$. then the test is said to be inhomogeneous. The homogeneity test results can be seen in Table 6 as follows:

Table 6. Summary of homogeneity test results

Group	df1	df2	Sig.	Information
Knowledge and Skills	1	28	0.231	Homogeneous

From Table 6 above it can be seen that the two groups have a p value (Sig.) > 0.05 so the data is homogeneous. The hypothesis in this study states “there is a significant influence of sports massage on the knowledge and skills of training participants”. The research conclusion is declared significant if the calculated t value $>$ t table (df n-2) and the sig value is smaller than 0.05 (Sig $<$ 0.05). Based on the results of the analysis, the data in Table 7 is as follows.

Table 7. Results of sports massage t-test analysis of the knowledge and skills of training participants

Archery Accuracy	Average	t-test for Equality of means			
		t ht	t tb	Sig.	Difference
Knowledge	168.07	4,861	2,048	0,000	20.33
Skills	188.40				

From the t-test results in Table 9 above, it can be seen that the t count is 4.861 and the t table (df 28; 5%) is 2.048 with a significance p value of 0.000. Because t count is $4.861 >$ t table 2.048, and the significance value is $0.000 <$ 0.05, then this result shows that there is a significant difference. Based on the results of this analysis, the alternative hypothesis (Ha) which states “there is a significant influence of sports massage on the knowledge and skills of training participants”, is accepted. This means that the sports massage training increases the knowledge and skills of the training participants.

DISCUSSION

Based on the research results, it shows that the influence of providing sports massage socialization in terms of knowledge and skills is a series where these two aspects go hand in hand and this training adds insight to the training participants, which is characterized by them being able to immediately practice and do it alternately. Sports massage itself is a massage with many partners where you need to practice to be memorized and consistent (Sumarjo et al., 2023). In this massage movement, it is always followed by pressure on the targeted muscles, to achieve a relaxed condition for athletes who are tired but does not damage the muscles that have been formed during exercise (Đukić et al., 2019).

Knowledge is an important element in massage conditions where the therapist comes into direct contact with various patients (Yao et al., 2024). So with the new knowledge in the form of sports massage, it is hoped that it will not only be the general public who can be massaged but will look at the suitability aspects of athletes who can also be massaged (Ekradi et al., 2024). This can be interpreted, by looking at the needs of society, where many sportsmen get massages but it actually reduces their performance so that with sports massage it can reduce the public stigma that spas are only for office and public circles but sportsmen can also get massages. Knowledge here according to (Ekradi et al., 2024; Godfrey et al., 2024; Nemati et al., 2024) is always associated with pure science which underlies a person’s knowledge where knowledge is the first step to development and innovation, so that with knowledge it is hoped that the therapist will not take it lightly and will still be willing to improve knowledge so that when doing massage the therapist has sufficient knowledge so that he can aspire to a better massage. efficient to be developed and combined with sports massage.

Skill is a condition where the therapist can carry out sports massage correctly and can increase his creativity (Nemati et al., 2024; Thomson-Casey et al., 2024). Apart from physical factors, sports massage is also aimed at improving psychosomatic aspects (factors related to various bodily symptoms that arise due to psychological factors). (Butala et al., 2024). Emotional tension causes various mistakes during massage (Suresh, 2024). A lack of self-confidence often causes skills to decline(Butala et al., 2024). This means that if skills are truly honed and precise, it will lead to high self-confidence so that work will feel easy and reduce stress (H.-M. Lee et al., 2024; Notsu et al., 2024). The implementation of mentoring to improve these skills is carried out intensively 12 times in 2 weeks. So

that training participants have the ability to adapt the massage skills learning that has been implemented in a coherent and clear manner. Even though this activity has been carried out with a thorough plan, there are still problems experienced where the training participants experience boredom where repetition of massage techniques is directed at not changing the structure and sequence first so that the training participants master it and can do it without assistance.

CONCLUSION

The solution offered by the community service team in this training program is to provide knowledge and skills to training participants so they can prevent and relieve sports injuries through sports massage. The material used for handling sports injuries is through sports massage based on Indonesian national standards. The modules that will be provided will make participants more effective during the training. Apart from that, this training will also provide several materials that the Team can use to increase their knowledge in the future. So that training participants can practice and combine sports massage to increase their skills in the field of SPA.

REFERENCES

- Ashraf, M. N., Cheng, A. Y. Y., & Robinson, D. J. (2024). Emotional, Psychological, and Social Well-being Experience of Long-Term Living with Type 1 Diabetes Mellitus: A Patient–Psychiatrist–Endocrinologist Perspective. *Diabetes Therapy*, 1–7.
- Ayudi, A. R., Sugiyanto, F. X., Yachsie, B. T. P. W. B., Hartanto, A., & Arianto, A. C. (2022). The Effect of Swedish massage And Sport Massage on the Recovery of Fatigue on Labor Workers or Collectors. *International Journal Of Multidisciplinary Research And Analysis*, 5(02), 359–365.
- Butala, S., Galido, P. V., & Woo, B. K. P. (2024a). Consumer Perceptions of Home-Based Percussive Massage Therapy for Musculoskeletal Concerns: Inductive Thematic Qualitative Analysis. *JMIR Rehabilitation and Assistive Technologies*, 11, e52328.
- Butala, S., Galido, P. V., & Woo, B. K. P. (2024b). Consumer Perceptions of Home-Based Percussive Massage Therapy for Musculoskeletal Concerns: Inductive Thematic Qualitative Analysis. *JMIR Rehabilitation and Assistive Technologies*, 11, e52328.
- Đukić, B., Mirković, M., Vujanović, S., & Strajnić, B. (2019). Young Athletes Upper Knee Muscular Strength Isokinetic Testing / Izokinetičko testiranje snage natkolene muskulature mladih sportista. *Спортске Науке и Здравље - АИИПОН*, 17(1). <https://doi.org/10.7251/ssh1901005dj>
- Edouard, P., Reurink, G., Mackey, A. L., Lieber, R. L., Pizzari, T., Järvinen, T. A. H., Gronwald, T., & Hollander, K. (2023). Traumatic muscle injury. *Nature Reviews Disease Primers*, 9(1), 56.
- Ekradi, S., Shahrbani, S., Todd, T., & Hassani, F. (2024). Effects of Physical Activity and Massage Therapy on Sleep Disorders Among Children with Autism Spectrum Disorder: A Systematic Review. *Review Journal of Autism and Developmental Disorders*, 1–17.
- Gavanda, S., von Andrian-Werburg, C., & Wiewelhove, T. (2023). Assessment of fatigue and recovery in elite cheerleaders prior to and during the ICU World Championships. *Frontiers in Sports and Active Living*, 5, 1105510.
- Godfrey, N., Donovan-Hall, M., & Roberts, L. (2024). A qualitative study exploring the ritual-like activity and therapeutic relationship between Pilates teachers and clients with persistent low back pain. *Journal of Bodywork and Movement Therapies*, 37, 25–37.
- Hamzehnejadi, Y., Shahrabaki, P. M., Alnaiem, M., Mokhtarabad, S., Tajadini, H., Rashidinejad, A., Abbas, J., & Dehghan, M. (2024). The impact of massage and dry cupping on dysrhythmia in cardiac patients: A randomized parallel controlled trial. *Journal of Bodywork and Movement Therapies*.
- Hernández, S. A., Parra-Sánchez, L., Montolio, M., Rueda-Ruzafa, L., Ortiz-Comino, L., & Sánchez-Joya, M. D. M. (2024). Family involvement and at-home physical therapy on Duchenne Muscular Dystrophy: a randomized controlled trial. *Pediatric Neurology*, 152, 34–40.
- Hernández-Sánchez, A., Parra-Sánchez, L., Montolio, M., Rueda-Ruzafa, L., Ortiz-Comino, L., & Sánchez-Joya, M. D. M. (2024). Family involvement and at-home physical therapy on Duchenne Muscular Dystrophy: a randomized controlled trial. *Pediatric Neurology*, 152, 34–40.
- Hussain, H. K., Ahmad, A., Adam, M. A., Kiruthiga, T., & Gupta, K. (2023). Prediction of Blood Lactate Levels in Children after Cardiac Surgery using Machine Learning Algorithms. *2023 Third International Conference on Artificial Intelligence and Smart Energy (ICAIS)*, 1163–1169.
- Ismail, H., & Rofi, M. A. (2024). Journal Efforts To Overcome Mental Disorders Patients With The Healing Spirituality Method Through Ruqyah Actions. *Zien Journal of Social Sciences and Humanities*, 28, 13–20.
- Kim, B., & Yang, X. (2023). Constructing the transformative wellness service framework: A phenomenological study. *International Journal of Hospitality Management*, 103527.
- Kirwa, M., & Nkomesha, V. (2023). *Therapeutic touch in elderly Systematic literature review Title: Therapeutic touch in elderly care: A systematic literature review*.
- Kuna, D., Škorić, L., & Buljan, T. (2023). DIFFERENCES BETWEEN PROFESSIONAL AND RECREATIONAL ATHLETES IN PSYCHOLOGICAL CHARACTERISTICS AND HABITS DURING THE COVID-19 PANDEMIC. *Sportske Nauke i Zdravlje*, 13(2), 238–244. <https://doi.org/10.7251/SSH2302238K>
- Kusparlina, E. P., Ishomuddin, Sukmana, O., & Sunaryo, S. (2023). Phenomenology Analysis of the Meaning of Healthy Living on Alternative Medicine Practices. *International Journal of Law and Society (IJLS)*, 2(3), 175–188. <https://doi.org/10.59683/ijls.v2i3.40>
- Lee, H.-M., Mercimek-Andrews, S., Horvath, G., Marchese, D., Poulin III, R. E., Krolick, A., Tierney, K.-L., Turna, J., Wei, J., & Hwu, W.-L. (2024). A position statement on the post gene-therapy rehabilitation of aromatic I-amino acid decarboxylase deficiency patients. *Orphanet Journal of Rare Diseases*, 19(1), 17.
- Lee, S., Choi, Y., Jeong, E., Park, J., Kim, J., Tanaka, M., & Choi, J. (2023). Physiological significance of elevated levels of lactate by exercise

- training in the brain and body. *Journal of Bioscience and Bioengineering*.
- Liu, G., Li, Y., Liao, N., Shang, X., Xu, F., Yin, D., Shao, D., Jiang, C., & Shi, J. (2023). Energy metabolic mechanisms for high altitude sickness: Downregulation of glycolysis and upregulation of the lactic acid/amino acid-pyruvate-TCA pathways and fatty acid oxidation. *Science of The Total Environment*, 164998.
- Mulyadi, A., & Sartono, S. (2019). The Effect of Sport Massage on Anxiety Before facing Exhibition. *Journal of Physical Education and Sport Science*, 1(2), 21–26.
- Musat, C. L., Niculet, E., Craescu, M., Nechita, L., Iancu, L., Nechita, A., Voinescu, D.-C., & Bobeica, C. (2023). Pathogenesis of Musculotendinous and Fascial Injuries After Physical Exercise-Short Review. *International Journal of General Medicine*, 5247–5254.
- Nemati, D., Munk, N., & Kaushal, N. (2024). Identifying behavioral determinants and stage of readiness for performing knee massage among individuals with knee osteoarthritis: an observational study. *Journal of Integrative Medicine*.
- Notsu, M., Naito, T., Notsu, A., Saito, A., Hiraoka, R., Suzuki, E., Takano, S., Yoda, M., Takakuwa, Y., & Yokoyama, E. (2024). Nursing students' self-assessed level of nursing skills at the time of graduation in a Japanese university: a retrospective observational study. *Asia-Pacific Journal of Oncology Nursing*, 100400.
- Pensgaard, A. M., Sundgot-Borgen, J., Edwards, C., Jacobsen, A. U., & Mountjoy, M. (2023). Intersection of mental health issues and Relative Energy Deficiency in Sport (REDs): a narrative review by a subgroup of the IOC consensus on REDs. *British Journal of Sports Medicine*, 57(17), 1127–1135.
- Priyonoadi, B., Graha, A. S., Ambardini, R. L., & Kushartanti, B. M. W. (2018). The Effectiveness of Post-Workout Fitness and Sports Massage in Changing Blood Pressure, Pulse Rate, and Breathing Frequency. *2nd Yogyakarta International Seminar on Health, Physical Education, and Sport Science (YISHPESS 2018) and 1st Conference on Interdisciplinary Approach in Sports (CoIS 2018)*, 529–533.
- Priyonoadi, B., Ndayisenga, J., Sutopo, P., & Graha, A. S. (2020). Immunoglobulin-A (IgA) improvement through sports and frirage massage. *International Journal of Human Movement and Sports Sciences*, 8(5), 271–282.
- Robergs, R., O'Malley, B., Torrens, S., & Siegler, J. (2023). The missing hydrogen ion, part-1: Historical precedents vs. fundamental concepts. *Sports Medicine and Health Science*.
- Songwathana, P., Chinnawong, T., & Ngamwongwiwat, B. (2023). Health practice among Muslim homebound older adults living in the Southern Thai community: An ethnographic study. *Belitung Nursing Journal*, 9(1), 43–53.
- Sumarjo, S., Nugroho, S., Dwihandaka, R., Prasetyo, Y., & Susanto, S. (2023). *The Effectiveness of Massage to Increase the Work Productivity of Persons With Disabilities*. <https://doi.org/10.7251/SSH2302191S>
- Suresh, A. (2024). A survey about the awareness among the physiotherapists in the use of Matrix Rhythm Therapy in treating chronic low back pain in post-menopausal women. *Bulletin of Faculty of Physical Therapy*, 29(1), 6.
- Thomson-Casey, C., McIntyre, E., Rogers, K., & Adams, J. (2024). Practice recommendations and referrals, perceptions of efficacy and risk, and self-rated knowledge regarding complementary medicine: a survey of Australian psychologists. *BMC Complementary Medicine and Therapies*, 24(1), 13.
- Yachsie, B. T. P. W. B., Pranata, D., Hita, I. P. A. D., Kozina, Z., & Suhasto, S. (2023). How Does Circuit Plank Exercise Affect Arm Muscle Strength and Archery Accuracy? *International Journal of Human Movement and Sports Sciences*, 11(5), 1114–1120. <https://doi.org/10.13189/saj.2023.110520>
- Yachsie, B. T. P. W. B., Suharjana, A. S. G., Prasetyo, Y., Nasrulloh, A., & Suhasto, S. (2023). *Mental Training to Improve the 40-Meter-Distance Archery Accuracy with Imagery and Meditation Methods*.
- Yao, J., Shang, Q., & Cong, D. (2024). Is Standardization the Future of Traditional Chinese Tuina (Massage) Therapy?-A Reflection on “Bibliometric Analysis of Research Trends on Tuina Manipulation for Neck Pain Treatment Over the Past 10 Years.” *Journal of Pain Research*, 151–152.

Primljen: 12. mart 2024. / Received: March 12, 2024
Prihvaćen: 21. april 2024. / Accepted: April 21, 2024

