

The Effect of Swedish massage And Sport Massage on the Recovery of Fatigue on Labor Workers or Collectors



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ABSTRACT: This study aims to determine the effect of Swedish massage and sports massage on fatigue recovery in laborers or coolies. This study uses an experimental method with a "two group's pre-test-post-test design" design. The population in this study were coolie workers or laborers who worked for 7-8 hours every day, totalling 22 people. The sampling technique used was purposive sampling technique. Inclusion criteria for male research subjects with an age range of 25-30 years, heavy workers who use their muscles and energy to work. The instrument in this study used a job fatigue questionnaire in the form of a work fatigue questionnaire. Data analysis used t-test with a significance level of 5%. The results showed that (1) there was an effect of Swedish massage on fatigue recovery in laborers or coolies. (2) There is an effect of sport massage on fatigue recovery in laborers or coolies, amounting to. (3) Sport massage is better than Swedish massage on fatigue recovery in laborers or coolies.

KEYWORDS: swedish massage, sports massage, fatigue recovery

INTRODUCTION

Work is an activity that is carried out by every human being to earn money as a medium of exchange for fulfilling their needs (Alimuddin, 2020). The types of work carried out are various, there are those who work as office workers and as laborers. Workers often ignore various aspects that can interfere with their work, health and comfort aspects that arise as a result of work fatigue, both physically and mentally, they often ignore and only care about the rewards of the work they do.

In general, physical fatigue can appear when doing activities that exceed the capacity of their physical abilities. Work fatigue can cause physiological and psychological fatigue (Kahpi, 2020). Symptoms that arise from physiological work fatigue can be felt from the appearance of pain in the muscles, stiffness or spasms in certain parts to excessive sleepiness, discomfort and boredom, which are effects that arise from increased lactic acid as a result of the body's metabolic processes work continuously (Puspitasari, 2020). Workers or coolies in Indonesia are more often connoted as a type of work that prioritizes muscles and great energy rather than intellectual ability and expertise to do the work (Labour Union Law, 2002: 9). Working as laborers or coolies requires high energy and fitness. Laborers or coolies who work for long periods of time and prioritize their muscular ability and energy to work can experience discomfort caused by muscle fatigue, the fatigue they feel is starting to get tired, the body feels stiff and has pain, muscle cramps, sometimes the worker becomes lethargic. and decreased motivation to work.

There are many ways that can be done when experiencing fatigue and to speed up recovery after activity, one of which is the massage method. With the treatment that is often done is the Swedish massage which aims to reduce muscle tension due to activity. Muscle tension that occurs is influenced by lactic acid in the blood due to the body's process of releasing energy (Kresnawati, 2018). Swedish massage is a massage that is carried out by a messure to help speed up the recovery process by using a touch of the hand and without introducing drugs into the body which aims to relieve or reduce complaints or symptoms in several kinds of diseases which are indications for massage. The goals of hand manipulation techniques (massage) include muscle relaxation, improvement of flexibility, reduction of pain, and improvement of blood circulation (Purnomo, 2016).

sports massage is one type of massage that is used as an alternative to relieve fatigue and fatigue (Prastowo & Arovah, 2014). This is because Sport massage is designed to facilitate blood circulation, especially the encouragement of venous blood or venous blood to the heart so as to help restore and process the rest of the metabolism, in addition to providing muscle and nerve relaxation. In sports massage the mainstay of manipulation techniques are Effluerage, Petrissage, Shaking, Tapotement, Friction,

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Walken, Efflurage, Vibration. Swedih massage is a manipulation of massage movements whose movements consist of effrage, friction, petrissage, tapotement which are carried out for 45 minutes.

METHODS

This type of research is experimental. The experimental method is defined as a systematic method for building relationships that contain causal-effect relationships.(Babang et al., 2019). The design used in this study was "Two Groups Pretest-Posttest Design", namely a research design that contained a pretest before being given treatment and a posttest after being given treatment, thus it can be known more accurately, because it can be compared with those held before being given treatment.(Bagaskara & Suharjana, 2019). The place of research is in the development of the UNY park on Jalan Colombo No. 1. The population in this study are coolie workers or laborers who work for 7-8 hours every day. This study used a population of 22 people. The sampling technique used purposive sampling technique. Inclusion criteria for male research subjects with an age range of 25-30 years, heavy workers who use their muscles and energy to work. All samples were pretested using a job fatigue questionnaire, ranked by pretest scores, then matched with the ABBA pattern in two groups with 11 members each. The sampling technique used is ordinal pairing. Ordinal pairing is the division of a group into two with the aim of both having the same or equal ability(ASRUL, 2018). The research instrument used a job fatigue questionnaire in the form of a work fatigue questionnaire. This questionnaire contains 3 main components, namely (1) physical complaints (seven questions), (2) motivation disorders (one question), (3) impaired concentration (two questions). Each question has an answer in the form of strongly disagree (STS) is worth 4, disagree (TS) is worth 3, agree (S) is worth 2, strongly agree (SS) is worth 1. The largest score that can be achieved is 40 while the minimum score is 10. Grid -The instrument grid in this study is as follows:

Table 1. FATIGUE INSTRUMENT GRID

Variable	Indicator	Factor	No Item	Amount
Fatigue	Physical Complaints	Sore	1	7
		Rigid	2	
		Painful	3	
		Weak	4	
		Slow	5	
		Fit	6	
		Comfortable	7	
	Motivational Disorder	Active	8	1
	Concentration Disorder	Productive	9	2
		Decrease	10	
Amount			10	

In order to test the accuracy of the data collection instrument, before the research began, the validity and reliability of the questionnaire was tested. In the first stage, the researcher conducted the content validity of the questionnaire. Content validity was conducted to determine the extent to which the questionnaire represented all aspects considered to be the conceptual framework. The second stage is to test the questionnaire to groups that have the same characteristics as the research subjects. Questionnaire trials were conducted on 20personcoolie workers or laborers who work for 7-8 hours every day. After being analyzed with the Corrected Item Total Correlation method, which correlates the score of the question items with the total score of the questions and correlates them with the coefficient value. In addition, the reliability test using the AlphaCronbach method obtained an alpha value of 0.830 (>0.60) so that the questionnaire was declared reliable and feasible to be used as a research instrument.

The data collection process is carried out in September 2021. Data collection is carried out for 2 weeks. For the first week for the Swedish massage treatment and the second week for the sports massage treatment. The researcher gave the first questionnaire (pretest) and provided instructions and guidance so that there were no mistakes in filling out the questionnaire. The first questionnaire was filled in by the subject after carrying out activities in the form of work, then being treated with Swedish massage and sports massage after work. The second questionnaire (posttest) was given after the Swedish massage and sports massage treatment ended. Guidelines for the implementation of treatment (massage treatment) refers to the FITT (Frequency, Intensity, Time, and Type) treatment program as follows:

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Table 2. Guidelines for the Implementation of Swedish Massage and Sport Massage

No	Component	Swedish Massage	Sports Massage
1	Frequency	One time treatment	One time treatment
2	Intensity	Pressure adapt muscle size or thickness	Pressure adapt muscle size or thickness
3	time	45minute, every manipulation 3-8 time test	45 minute, every manipulation 3-8 time test
4	Type	Swedish Massage picture and order attached	Sport Massage picture and the attached order

after the data is collected, it is analyzed using SPSS 2020, before testing the hypothesis, it is necessary to test prerequisites. Testing of measurement data related to research results aims to help the analysis to be better. For this reason, this study will test the normality and homogeneity of the data. Before proceeding to the t-test, there are requirements that must be met by the researcher that the analyzed data must be normally distributed, for that it is necessary to carry out a normality test and a homogeneity test.(Wiratama & Karyono, 2017).

RESULTS

Table 3. Pretest and Posttest Results of Group Work Fatigue Swedish Massage

No Subject	Pretest	Posttest	Difference
1	39	30	9
2	38	33	5
3	38	28	10
4	37	30	7
5	37	31	6
6	34	32	2
7	34	31	3
8	32	28	4
9	31	30	1
10	31	30	1
11	31	27	4
mean	34.73	30.00	
Standard Deviation	3.17	1.79	
Minimum	31.00	27.00	
Maximum	39.00	33.00	

Based on the data in table 3 above, the distribution of work fatigue pretest and posttest for the Swedish massage group is presented in table 4 as follows:

Table 4. Distribution of Pretest and Posttest Work Fatigue in Swedish Massage Group

Category	interval	Pretest		Posttest	
		Frequency	Percentage	Frequency	Percentage
Very tired	34	7	63.64%	0	0.00%
Tired	26 33	4	36.36%	11	100.00%
Less Tired	18 25	0	0.00%	0	0.00%
Lost Tired	17	0	0.00%	0	0.00%
Amount		11	100%	11	100%

Based on table 4. above, it shows that work fatigue before being given swedish massage treatment in the categories of fatigue loss of 0% (0 people), less tired 0% (0 people), tired 36.36% (4 people), and very tired 63.64% (7 people), then at the posttest the fatigue category was 0% (0 people), 0% less tired (0 people), 100% tired (11 people), and very tired 0% (0 people).). These data indicate that there is a decrease in work fatigue after being given swedish massage treatment.

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Table 5. Pretest and Posttest Results of Sport Massage Group Work Fatigue

No Subject	Pretest	Posttest	Difference
1	39	22	17
2	38	23	15
3	38	24	14
4	38	22	16
5	37	23	14
6	35	24	11
7	34	21	13
8	32	24	8
9	31	25	6
10	31	24	7
11	31	15	16
mean	34.91	22.45	
Standard Deviation	3.24	2.73	
Minimum	31.00	15.00	
Maximum	39.00	25.00	

Based on the data in table 5 above, the distribution of work fatigue pretest and posttest for the sports massage group is presented in table 6 as follows:

Table 6. Distribution of Group Work Fatigue Pretest and Posttest Sports Massage

Category	interval	Pretest		Posttest	
		Frequency	Percentage	Frequency	Percentage
Very tired	34	7	63.64%	0	0.00%
Tired	26 33	4	36.36%	0	0.00%
Less Tired	18 25	0	0.00%	10	90.91%
Lost Tired	17	0	0.00%	1	9.09%
Amount		11	100%	11	100%

Based on table 6 above, it shows that work fatigue before being given sports massage treatment in the categories of fatigue loss of 0% (0 people), less tired 0% (0 people), tired 36.36% (4 people), and very tired 63.64% (7 people), then at the posttest the fatigue category was 9.09% (1 person), less tired 90.91% (10 people), 0% tired (0 people), and very tired 0% (0 people). These data indicate that there is a decrease in work fatigue after being given sports massage treatment.

Table 7. Summary of Normality Test Results

Group		p	Sig.	Description
Swedish Massage	Pretest	0.672	0.05	Normal
	Posttest	0.621	0.05	Normal
Sports Massage	Pretest	0.796	0.05	Normal
	Posttest	0.486	0.05	Normal

From the results of table 7 above, it can be seen that all data have a p value (Sig.) > 0.05. then the variables are normally distributed. Since all data are normally distributed, the analysis can be continued with parametric statistics.

Table 8. Summary of Homogeneity Test Results

Group	df1	df2	Sig.	Description
Pretest	1	20	0.951	Homogeneous
Posttest	1	20	0.472	Homogeneous

Table 8 above shows that the pretest-posttest scores are sig. $p > 0.05$, so the data is homogeneous.

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Table 9. T-test Results of Group Work Fatigue Pretest and Posttest *Swedish Massage*

Group	Average	t-test for Equality of means				
		t ht	t tb	Sig.	Difference	%
Pretest	34.73	5,164	2,228	0.000	4.73	13.62%
Posttest	30.00					

From the results of the t-test, it can be seen that the t-count is 5.164 and the t-table (df 10) is 2.228 with a p significance value of 0.000. Because t count 5.164 > t table 2,228, and a significance value of 0.000 < 0.05, this result indicates that there is a significant difference. The effectiveness of swedish massage in reducing work fatigue is 13.62%.

Table 10. T-Test Results of Pretest and Posttest Work Fatigue in Sport Massage Group

Group	Average	t-test for Equality of means				
		t ht	t tb	Sig.	Difference	%
Pretest	34.91	10,640	2,228	0.000	12.45	35.66%
Posttest	22.45					

From the results of the t-test, it can be seen that the t count is 10.640 and the t table (df 10) is 2.228 with a p significance value of 0.000. Because t count 10,640 > t table 2,228, and a significance value of 0.000 < 0.05, this result indicates that there is a significant difference. The effectiveness of sport massage in reducing work fatigue is 35.66%.

Table 11. Swedish Massage and Sport Massage t-test group

Group	Percentage	t-test for Equality of means			
		t ht	t tb	sig,	Difference
Swedish Massage	-13.62%	5,200	2,086	0.000	0.583
Sports Massage	-35.66%				

From the table of t-test results above, it can be seen that the t-count is 5.200 and the t-table (df = 20) = 2.086, while the significance value of p is 0.000. Because t arithmetic 5,200 > t table = 2,086 and sig, 0.000 < 0.05, it means that there is a significant difference. Based on the results of the analysis, the percentage of the effectiveness of sport massage is better than swedish massage on fatigue recovery in laborers or coolies.

DISCUSSION

Based on the results of the analysis showed that swedish massage had a significant effect on the recovery of fatigue experienced by coolies or laborers. This is supported in the journal(Hanief et al., 2019)that swedish massage can relieve pain then also provide relaxation and can also be used as athlete rehabilitation so that they recover quickly and recover. In addition, Swedish massage is also an important support in the success of an athlete to excel in the future, because if an athlete experiences fatigue, his physical condition with this treatment can quickly return to its original condition during competition or after competing.

Swedish Massage is the manipulation of body tissues with special techniques to shorten recovery time from muscle tension (fatigue), increase blood circulation without increasing the workload of the heart(Armade & Putra, 2017). Swedish massage aims to reduce muscle tension due to activity. Muscle tension that occurs is influenced by lactic acid in the blood due to the body's process of releasing energy. Swedish massage is a massage that is carried out by a messure to help speed up the recovery process by using a touch of the hand and without introducing drugs into the body which aims to relieve or reduce complaints or symptoms in several kinds of diseases which are indications for massage. The goals of hand manipulation techniques (massage) include muscle relaxation, improvement of flexibility, reduction of pain, and improvement of blood circulation(Akhmad et al., 2021).

The benefits of Swedish massage performed on the body can provide physiological effects in the form of increasing blood flow, lymphatic flow, stimulation of the nervous system, increasing venous return. Can relieve pain, namely by increasing the pain threshold, because it stimulates increased production of endorphins. Research conducted by (Zaritsky et al., 2021) showed that 90aq can directly increase venous flow in the skin and increase venous return. This increased venous return will help efficiently return blood to the heart, and help drain the lactic acid that has accumulated in the muscles so that it helps accelerate the elimination of lactic acid in the blood and muscles (Moses, 2021).

Based on the analysis data, sport massage is useful to help reduce pain, and help relax muscles, so that it can cure fatigue experienced by workers or coolies. Sport massage has a mainstay of the order and manipulation technique, namely Tapotement and Efflurage which is more needed in the targeted area with the pressure applied must be strong enough, intentionally given directly at the beginning of the massage to cause a shock and stimulate the release of endorphins which function in the stages of reducing lactic acid.(Saputro, 2017).

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Massage after physical activity was given after cooling and stretching. It aims to reduce muscle tension and increase the disposal of metabolic waste that occurs after exercise. In addition, efforts are also made to reduce post-exercise pain that occurs immediately or shortly after physical work, maintain joint range and increase blood and lymph circulation in tense muscles. (Mirawati et al., 2017). The benefits of sports massage after exercise can help speed up muscle recovery to be able to return to a relaxed and rested state. Massage in this situation there is an increase in venous return so that it can increase the process of cleaning metabolic waste.

The results showed that sport massage was more effective than Swedish massage in reducing the level of fatigue experienced by coolies or laborers. This is because sports massage is more suitable to be given to active workers who work a lot with high physical activity. This active activity causes poor circulation and muscle tension. This can be overcome by doing sports massage because sport massage aims to improve blood circulation, reduce muscle tension and muscle elasticity, reduce nervous tension and reduce pain. (Giyanti, 2019).

The difference between these two massages is in the order of the massage locations, sport massage starts with massaging the inferior parts of the body, namely the upper limbs, lower legs, feet, back, then proceeds to a supine position on the upper limbs, calves, back of the feet, abdomen, chest, hands. and ends at the head. Swedish massage starts from the supine position in the superior part of the head, chest, abdomen, arms, hands, legs, ending on the backs of the feet. After that proceed with the prone position starting from the legs, buttocks and ending on the back. Judging from the sequence of manipulation techniques, sport massage starts with effleurage, petrissage, tapotement, shaking and ends with effleurage again. The Swedish massage technique starts with effleurage, petrissage, tapotement manipulation and ends with shaking manipulation.

Sport massage is more effective because the manipulation of sport massage movements is more than Swedish massage. In sports massage the movements include effleurage, petrissage, tapotement, friction, shaking, walken, skin rolling, and chiropractic, while in Swedish massage includes friction, walken, tapotement, skin rolling, and effleurage. With more variations of sports massage movements than Swedish massage, it is faster to overcome work fatigue caused by less smooth blood circulation and accumulation of lactic acid. This can be interpreted that sports massage can be used as a type of therapy used to overcome the fatigue experienced by coolies or laborers. Nurmala (2017) mentions that sport massage is useful for maintaining and restoring weak physical conditions with a stimulating effect on the functions of body organs and adjusting the activities carried out. Sport massage is a type of massage that is often used by athletes to maintain physical fitness. Sport massage has more benefits for improving blood circulation, stimulating breathing, increasing muscle tension, muscle elasticity, and reducing or eliminating nervous tension to reduce pain. (Ripai & Graha, 2018). Sports massage will release the tension and muscle stress that is felt caused by excess physical activity.

Activities carried out by coolies or laborers are very susceptible to causing work fatigue. Work fatigue experienced by coolies or laborers can affect daily activities. Work fatigue experienced by coolies or laborers must be resolved as soon as possible, so that they can support coolies or laborers in their work. Sport massage is one option that can be used. Judging from the physiological function, sport massage is useful to help reduce pain, and help relax muscles so that it can heal the fatigue experienced by athletes after doing sports activities. As stated by Masruro & Rahman Hidayat (2020) mentions that sports massage is useful for improving blood circulation and relieving nervous tension caused by excess physical activity, making it suitable to be applied to active workers.

CONCLUSIONS

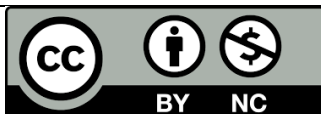
Based on the results of data analysis and discussion, conclusions can be drawn, namely: (1) There is an effect of Swedish massage on fatigue recovery in laborers or coolies. It can be seen that t count is 5.164 and t table (df 10) is 2.228 with a significance value of 0.000 p . Because t count 5.164 > t table 2,228, and a significance value of 0.000 < 0.05, this result indicates that there is a significant difference. (2) There is an effect of sport massage on fatigue recovery for laborers or coolies. It can be seen that t count is 10.640 and t table (df 10) is 2.228 with a p significance value of 0.000. Because t count 10,640 > t table 2,228, and a significance value of 0.000 < 0.05, this result shows that there is a significant difference. (3) Sport massage is better than Swedish massage on fatigue recovery in laborers or coolies. It can be seen from the results of data analysis that t -count is 5.200 and t -table (df = 20) = 2.086, while the significance value of p is 0.000. Because t arithmetic 5,200 > t table = 2,086 and sig, 0.000 < 0.05, it means that there is a significant difference.

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