THE EFFECT OF MASSAGE ON REDUCING FATIGUE AFTER TRAINING IN ACEH PABSI WEIGHTLIFTERS

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ABSTRACT

This study aims to investigate the effect of massage therapy on reducing fatigue in weightlifters at the Indonesian Weightlifting Association (PABSI) Aceh. Data was collected from 15 athletes through pretests and postes using fatigue assessment instruments. The results of the data analysis showed that the average score of the pretest was 67.33, while the postes increased to 97.00. In addition, the median value of the pretest is 65.00 which rises to 95.00 in postes. The normality test shows that the pretest and posttest data are normally distributed (p > 0.05). T-test analysis yielded a t-count of 8.378, exceeding the table's t (1.76131) by significant values of 0.000 < 0.05. Therefore, there is a significant difference between pretes and postes, supporting the acceptance of alternative hypotheses. These findings suggest that massage therapy has a significant positive impact on reducing fatigue in weightlifters. The implications of this research can be used as a basis for further development of athletic recovery methods and contribute to a practical understanding of the benefits of massage in the context of weightlifting.

Keywords: Massage, Fatigue, Weightlifters

INTRODUCTION

Sports coaching is given intentionally to each individual and community group through sports activities to improve health, physical fitness and increase performance. Coaching is given through several stages that aim to achieve changes from the sport pursued. Thus, efforts to coach sports achievements require patience in order to achieve achievements in the sports involved. Weightlifting is a sport that competes to lift heavy weights called barbells,

which is done with a combination of strength, flexibility, concentration, ability, discipline   (Tuti Sarwita &; Zulheri Is, 2021).

The word "weightlifting" is usually unofficially used as weight training. In this sport, there are two types of forces that are often contested, namely clean and jerk and snatch forces. The snatch type of lift is a type of direct lift without pause, in which the athlete must lift weights from the floor without bending his knees until both hands lift the weight (barbell) straight above the head in a perfect standing position for a few seconds, until the judges ring the bell of the valid force. Clean and jerk type athletes lift the barbell in two stages. First, squat down and lift weights from the floor to chest level. After pausing to take a standing position, the athlete raises the dumbbells until both arms are straight above the head and stays in a perfectly standing position for a few seconds until the referee rings the legal lifting bell. (Tuti Sarwita &; Zulheri Is, 2021)   (Is & Sarwita, 2022)

Both types of lifts can be done individually or in combination. Therefore, the athlete's record is the maximum number of blows, jerks and loads for the entire jerk movement. The organization that oversees the sport of weightlifting around the world is the International Weightlifting Federation (IWF), the governing body of international weightlifting. The organization is recognized by the International Olympic Committee (IOC) and is headquartered in Budapest, Hungary. In 2015, the organization had 187 members. Founded in 1905, the organization that oversees weightlifting in Asia is the AWF (Asian Weightlifting Federation), which is the official governing body of weightlifting. (Is & Sarwita, 2022)

In 2020 the general manager of Weightlifting, Weightlifting, Bodybuilding throughout Indonesia (PB PABBSI) officially disbanded in national deliberations. After being disbanded, each branch previously protected by PB PABBSI, namely Weightlifting, Weightlifting and Bodybuilding, separated itself and formed its own management. It is at the request of the Parent World weightlifting organization (IWF) that the weightlifting organization be separated. if not, we will get sanctions," said PB deputy chairman Joko Pramono November 1, 2020 PABBSI officially separated each branch and had its own organization. With this dissolution, weightlifting will take shelter under the Indonesian Weightlifting Association (PABSI), in accordance with the appeal of the Minister of Law and Human Rights to the central KONI, that sports organizations, unity, must be transformed into associations. (Is & Sarwita, 2022)

Exercise is a process to improve one's abilities. Exercise is usually defined as a systematic process that is carried out over a long period of time, repetitive, progressive, and has the aim of improving physical appearance (Bompa, in. When athletes train optimally during training in a certain time, the muscles will experience fatigue. This muscle fatigue will result in decreased quality of motion of athletes. According to Sukadiyanto (2011: 38) one sign of muscle fatigue is the occurrence of muscle spasms (kramp), which is caused by

the unsmooth process of resynthesizing lactic acid into ATP back in the muscle. Sarwita et al., 2021)

Rijal, 2019 Muscles that experience tension will affect the athlete's body movements, for that the muscles need to be relaxed. Muscle relaxation can be done with massage. According to lactic acid that can accumulate in body tissues and cause muscle stiffness, it can be circulated through massage. This is because massage is a manipulation that has the aim of blood circulation. Also said, the role of massage after a strenuous activity is often forgotten, even though massage can be very useful to help recovery and prevent stiffness that may follow. Massage can be divided into several types, including sports massage. According to Bambang, sport massage is a massage that is specifically used or given to people who are healthy in body, especially sportsmen. In sports massage the types of manipulations used are effleurage (rubbing), petrissage (comot-press), shaking (shaking), tapotement (hitting), friction (grinding) and many other types. Each of these manipulations has a different purpose in each use. For this reason, researchers want to know the benefits of giving sports massage to reduce feelings of fatigue after exercise. Because according to sports massage is important for sportsmen under their care in an effort to improve and maintain the physical condition and achievements of athletes. Riyan Hidayatullah & Yaka Saputra, 2021 (Musrifin &; Bausad, 2021a) Musrifin &; Bausad, 2021b

Weightlifting, as one of the sports that demands extraordinary physical and mental strength, involves intensive training to improve muscle strength and athlete performance. In order to achieve maximum performance, weightlifters engage in strenuous training that can cause significant fatigue. Decreased fatigue after training is crucial to ensure optimal recovery and athlete readiness for the next training session. One method that is increasingly known in speeding up the recovery process is massage therapy or massage.

The use of massage as a form of recovery therapy has received widespread attention in the world of sports. Some previous studies have shown that massage can contribute significantly to reducing fatigue, improving blood circulation, and relieving muscle tension after intense exercise. However, specific research on the effect of massage on reducing fatigue in weightlifters is still limited, especially within the Indonesian Weightlifting Association (PABSI) in the Aceh region.

Aceh, as a province with tremendous athletic potential, is an attractive environment to explore the impact of massage on reducing fatigue in weightlifters. PABSI Aceh weightlifters engage in intense training and require optimal recovery to maintain and improve their performance. Therefore, this study aims to investigate the extent of the effect of massage on reducing fatigue after exercise in PABSI Aceh weightlifters.

Previous research suggests that massage may affect physiological and psychological parameters related to recovery, including decreased lactic acid levels, improved blood circulation, and increased muscle relaxation. Therefore,

this study will involve an in-depth analysis of these effects on PABSI Aceh weightlifters. (Rijal, 2019)

Massage can be divided into several types, including sports massage. According to sports massage is a massage that is specifically used or given to people who are healthy bodies, especially sportsmen. In sports massage the types of manipulations used are effleurage (rubbing), petrissage (comot-press), shaking (shaking), tapotement (hitting), friction (grinding) and many other types. Each of these manipulations has a different purpose in each use. For this reason, researchers want to know the benefits of giving sports massage to reduce feelings of fatigue after exercise. Because according to Priyonoadi (2008: 1) sport massage is important for sportsmen under his care in an effort to improve and maintain physical condition and athlete achievement. Priyonoadi (2015).

METHODS

This research is a combination research method (mixed methods). Combination research methods are research methods that combine quantitative methods and qualitative methods (Sugiono, 2014).

Research Subjects

The subjects in this study were PABSI Aceh athletes who were still actively participating in training with training programs that had been prepared by coaches and had participated in various championships or prepared to participate in championships totaling 15 people.

Data collection techniques

Data collection techniques using questionnaire questionnaires are specific using Likert Scale. A pre-compiled questionnaire was distributed to respondents. Questionnaires are given after the athlete finishes training and before and after treatment, namely massage.

RESULTS AND DISCUSSION

The study was conducted by distributing questionnaires on the effect of massage on reducing fatigue after training in PABSI Aceh athletes. The questionnaire filling process is carried out independently by athletes with guidance from the data collection committee. The questionnaires that have been filled out by athletes are then collected again and then given scores according to those filled in by athletes.

Table 1. Research results

No	Student Code	Questionnaire and Score	
		Prites	Postes
1	Subject 1	65	95
2	Subject 2	75	110
3	Subject 3	60	90
4	Subject 4	55	85
5	Subject 5	85	110
6	Subject 6	85	100
7	Subject 7	65	95
8	Subject 8	70	95
9	Subject 9	60	85
10	Subject 10	80	115
11	Subject 11	65	90
12	Subject 12	55	90
13	Subject 13	60	100
14	Subject 14	60	105
15	Subject 15	70	90
Sum		1010	1455

From the research process that has been carried out by conducting research on all PABSI Aceh athletes totaling 15 people who were given treatment by doing Massage, data were obtained from data calculations. This is based on the results of descriptive calculations obtained the following values.

Table 2. Statistics of research results

		Pretest	Postes
N	Valid	15	15
	Missing	0	0
Mean		67.33	97.00
Median		65.00	95.00
Mode		60	90
Std. Deviation		9.976	9.411
Variance		99.524	88.571
Range		30	30
Minimum		55	85
Maximum		85	115
Sum		1010	1455

From the data above, it can be described pretes with a Mean of 67.33, Postes Mean 97.00 pretes with a Median of 65.00, Postes Median 95.00, sera Sum Pretes 1010 and Postes 1455.

Normality Test

The normality test was tested on each research data, namely pretest and posttest data. The normality test was performed using the *One-Sample Kolmogorov-Smirnov* Test formula with the SPSS 16 program. The data is said to be a normal distribution if the significant value obtained is greater than 0.05. The following will be presented the results of the normality test obtained.

Table 3. Normality Test Results

One-Sample Kolmogorov-Smirnov Test		*Pretest*	*Postes*
N		15	15
Normal Parametersa	Mean	67.33	97.00
	Std. Deviation	9.976	9.411
Most Extreme Differences	Absolute	.192	.184
	Positive	.192	.184
	Negative	-.108	-.116
Kolmogorov-Smirnov Z		.745	.713
Asymp. Sig. (2-tailed)		.635	.689

a. Test distribution is Normal.

Based on the table above, it can be seen that all data (pretest and posttest) have a p value (Sig.) of more than 0.05 (> 0.05) then the two variables are normally distributed. Or it can be interpreted that the significance value of pretest and posttest is greater than 0.05, then it can be concluded that the data is normally distributed. Since the data is normally distributed, analysis can continue.

Test the hypothesis

This study used experimental research methods, analysis of research data using t-test, carried out by comparing pretest-posttest results. If the calculated t value is smaller than the table t then Ha is rejected, and if the calculated t value is greater than the table t then Ha is accepted. The results of the t-test are as follows:

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Pretes_Postes Equal variances assumed	.045	.833	-8.378	15	.000	-29.667	3.541	-36.920	-22.413
Equal variances not assumed			-8.378	14.905	.000	-29.667	3.541	-36.921	-22.412

Figure 1. Independent Samples Test

From the results of the t-test it can be seen that t is calculated at 8.378 and t table is 1.76131 (df = (n-1) = 14) with a significant value of 0.833. Therefore, t count 8.378 > t table 1.76131, and significant values 0.000 < 0.05. So, these results show that there is a significant difference. Thus, the alternative hypothesis (Ha) is accepted.

Discussion

The results of data analysis show a number of relevant information related to changes that occur in the observed variables. First, in terms of descriptiveness, it can be seen that the average pretest score is 67.33, while postes increase to 97.00. This reflects a significant increase in variables observed after the treatment or intervention is administered. Similarly, the pretest median of 65.00 rose to 95.00 in postes, indicating consistency of improvement across the data range. In addition, the sum pretest value that was originally 1010 increased to 1455 on postes, giving an overall picture of the total score increase.

Furthermore, the normality test results show that the pretest and posttest have a p value (Sig.) greater than 0.05, which is > 0.05. This indicates that the data is normally distributed. This conclusion is important because it validates the sustainability of data analysis by parametric methods, such as t-tests. From the results of the t-test, it is obtained that t is calculated at 8.378, while t table for degrees of freedom (df) is 14 and the significance level of 0.05 is 1.76131. Since t count is greater than t table (8.378 > 1.76131) and significance value (p-value) of 0.000 < 0.05, it can be concluded that the difference between pretes and postes is statistically significant. These results indicate that the intervention has a significant impact on the observed variables. There was a significant improvement between the initial condition (pretest) and the condition after treatment (postes). Therefore, the alternative hypothesis (Ha) is accepted, confirming that there is a significant positive influence of the tested factor on the variable under study.

The observed increase in such variables has positive implications for the effectiveness of the treatment or intervention administered. These results can be used as a basis for formulating further recommendations or further

developments related to the effect of massage on reducing fatigue in weightlifters. In addition, further research and in-depth analysis can provide further insight into the mechanisms and factors that influence the observed results.

CONCLUSIONS

Based on the data analysis that has been done, it can be concluded that the results of the study showed significant changes between pretests and postes on the observed variables. In the pretest stage, the average score was 67.33, while in postes it increased to 97.00. This can also be seen from the median pretest of 65.00 which rose to 95.00 in postes. In addition, the sum pretest value of 1010 increases to 1455 in postes. The results of the normality distribution test show that both variables, pretest and posttest, have a significance value (p-value) greater than 0.05, which is > 0.05. Therefore, it can be concluded that the data is normally distributed. This conclusion allows continued analysis of data with appropriate methods.

From the results of the t-test, it was found that the t-count was 8.378, exceeding the table's t by 1.76131 with a significance level of 0.05. In addition, the significance value (p-value) is 0.000, which is also less than 0.05. Therefore, it can be concluded that the difference between pretes and postes is statistically significant. Thus, it is acceptable to accept the alternative hypothesis (Ha) which states that there is a significant difference between the conditions before (pretest) and after (postes) treatment or intervention. That is, there is a real influence of the factors tested on the observed variables. These results imply that the treatment or intervention given has a positive effect on the variables being studied.

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