
Effect Of Leg Vest And Rubber Load Training On The Sickle Kick Ability Of Psht Pencak Silat Athletes Of Samarinda City

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Abstract

This study was submitted to obtain information about the influence of the use of foot and rubber on the ability of sickle kicks in PSHT martial arts athletes. The type of research used is field experiment research, simple in this study using psht Samarinda martial arts athletes as many as 40 people of the male sex, Based on the results of the research price t calculate for the influence of foot training on the improvement of kicking ability. sickle = -17.22, while for t calculate the effect of rubber weight training = -15.41, and for t calculate between the influence of foot load training and rubber load is, 3.14 there is a significant relationship between variables in the test, then In this study, there were 3 results, namely: there is an influence of foot weight training on the ability of sickle kicks in PSHT athletes, there is an influence of rubber weight training on the sickle kick ability of PSHT athletes, and there are differences in the influence of foot weight training and rubber weight training, and foot weight training is better than rubber weight training on the sickle kick ability of PSHT athletes Samarinda

Keywords: *Vest exercise. rubber load, sickle kick, PSHT Samarinda*

INTRODUCTION

Pencak silat is a native Indonesian martial art, which has been centuries old, Pencak silat is passed down through generations from one generation to the next, Gerak Pencak silat base is a planned, directed, coordinated, and controlled movement. Which has four aspects as a unit. (Johansyah lubis.2004:7) namely: Spiritual mental aspects, Martial aspects, sports aspects, Arts and cultural aspects

Thus, Pencak silat is a sport that is quite complete to learn because it has four aspects that are a whole unit and cannot be separated. Pencak silat in addition to being a martial art originating from Indonesia that must be preserved, Pencak silat can also be contested. In Pencak Silat matches, not all techniques are used and played following the applicable provisions and categories contested. These categories are match categories, singles, doubles, and squads. In the match category match, fighters face each other by using elements of defense and Pencak Silat attacks, fending off / evasive, wearing targets, and knocking down opponents. by applying the rules of Pencak Silat and obeying the prescribed prohibitions. The point of the rule here is that in achieving technical achievements, a fighter must develop a pattern of competition that starts from the tide attitude, step pattern, measuring distance against opponents, and coordination in carrying out attacks/defenses and returning to the tide attitude. The development of Martial Arts techniques and tactics Pencak Silat is a combination of tide attitude or standard attitude, technical elements, and elements of tactics with the development of techniques and tactics, fighters can carry out patterned martial arts movements and meet the rules of Pencak Silat. In addition, fighters will also be able to overcome every attack and retaliate against it with *effective* attacks, so that the best achievements will be obtained ... Furthermore, about the ten components, each is Strength, Endurance, Muscle Power, Speed, Flexibleness, Agility, Coordination, Balance of Reaction Accuracy By bringing up the

elements mentioned above, not everyone should be able to develop it as a whole. Every human being has advantages and disadvantages of internal factors and external factors. In addition, gender for also determines. Thus, it is not surprising that these elements are very different in development in each individual. In Basic Skills, Pencak silat has several basic techniques, including Hand attack, foot attack, tide attitude, martial arts, hindrance, horses, catch and step patterns. Of the basic techniques of Pencak Silat Skills above that became the focus of research is the ability of Kicking. Because of the ability to kick ability possessed by every athlete Silat psht Samarinda allegedly there is an influence of foot load training and rubber load on the ability of sickle kicks in PSHT martial arts athletes Samarinda.

RESEARCH METHODS

This research is a type of Field Experiment research, which is a study that intends to hold experimental activities to see an outcome that will establish casual between variables to be studied. The design of the research is a picture or design of a study with variables that will be researched and will be tested for truth. It needs to be explained operationally, the variables used in the research are as follows:

A. Foot Rompi Load

Foot weight is a rump weight training that is in the form of a rump mounted on the ankle that serves as a load, intending to train the speed of power on the legs, with the form of the exercise is to do a sickle kick as quickly as possible repeatedly using the rump load on the leg. The kicking leg.

B. Rubber Load

Beban rubber is a form of exercise that is rubber as a weight tied to the ankle (lower leg), to train the ability to swing the lower limbs, with the form of exercise is to perform sickle kick movements in martial arts as quickly as possible repeatedly.

C. Sickle Kick ability

Sickle kick ability is the ability of an athlete to take consecutive kicks in the shortest time with the target of all parts of the body.

RESULTS AND DISCUSSION

From the data of the results of the training experiment test of the attached data, here is a descriptive description.

Table 1. Descriptive data on foot romp weight training.

Rump weight training foot	N	Range	Min	Max	Mean	Std. Deviation	Variance
Initial Test	20	24	40	64	48,10	4,67	21,884
Final Test	20	16	54	70	59,20	4,06	16,484

Based on the summary of the results of the analysis of the initial test experiment test and the final test of the foot rump

selection in table 4.1, it can be described as follows:

- Preliminary test data from the Foot Weight training from 20 samples obtained an average score of 48.10 and a standard deviation of 4,678.
- The final test data of the Foot Weight training from 20 samples obtained an average score

of 59.20 and a standard deviation of 4,060.

Thus there is a difference in the mean of the initial test and the mean of the final test of the Foot Weight training exercise, where the final test means is obtained at $59.20 > 48.10$ from the initial test mean as comparison material.

Rubber Load Training Experiment Test Result Data

Furthermore, the data will be described as a result of research for rubber weight training, as follows:

Table 2. Descriptive data

Rubber load	N	Range	Min	Max	Mean	Hours Deviation	Variance
Initial Test	20	9	44	53	47,65	2,601	6,766
Final Test	20	12	52	64	55,55	3,235	10,471

Based on the summary of the results of the analysis of the initial test experiment test and the final test of the goal run in table 4.2, it can be described as follows:

- The initial rubber weight training test data from 20 samples obtained an average score of 47.65 and a standard deviation of 2,601.
- The final rubber weight training test data from 20 samples obtained an average score of 55.55 and a standard deviation of 3,235.

Thus there is a difference in the mean of the initial test and the mean of the final test of the Foot Load exercise, where the training weights of the foot mean final test obtained $59.20 > 48.10$ from the initial test mean as comparison material. The final test obtained $59.20 > 48.10$ from the initial test mean as comparison material. Similar to the rubber weight training group, the final test mean was obtained at $59.20 > 48.10$ from the initial test mean as comparison material. The description above is just an overview of the data obtained from the results of the study and has not shown the actual results of the research. To find out the actual results of the study, the data of the results of the experiment will be analyzed further by using parametric statistics to test the hypothesis through a t-test at a significance level of 95%. But before using parametric statistics, a normality test is first carried out.

Data Normality Requirements Test

One of the assumptions that must be met for parametric statistics to be used is that the data must be distributed normally. If the test results data turns out to be data on all variables distributed normally, then one of the requirements to use parametric statistical analysis has been met. The sickle of PSHT Samarinda athletes distributed normally, so the data normality test was carried out using the Kolmogorov Smirnov (KS-Z) test.

Table 3. The results of the normality test results of the initial test experiment and the final test of foot weight training.

Exercise	Absolute	Positive	Negative	Until-Smirnov Z	Itself (2-tailed)	Prob
Foot rump load						
Initial Test	0,192	0,192	-0,154	0,860	0,450	0,05
Final Test	0,266	0,266	-0,115	1,191	0,117	0,05

Based on Table 3 above shows that the results of this study using Kolmogorov Smirnov processing at a significant level of 95%. Group A who were given foot weight training, for the

initial test obtained a value Kolmogorov Smirnov 0.860 with a sig level of 0.450 greater than the prob value of 0.05. Then for the final test, the sig level is $0.117 > 0.05$. Thus it can be concluded that the foot weight training data for the initial test and the final test is distributed normally.

Table 4. The results of the normality test results are preliminary and the final test of rubber weight training.

rubber load	Absolute	Positive	Negative	Until-Smirnov Z	Itself (2-tailed)	Prob
Initial Test	0,102	0,102	-0,080	0,456	0,986	0,05
Final Test	0,245	0,245	-0,136	1,094	0,182	0,05

While in Group B who were given rubber weight training, for the initial test obtained a value of Kolmogorov Smirnov 0.456 with a sig level of 0.986 greater than the value of $P = 0.05$ at a significant level of 95%. Thus the final test obtained a value Kolmogorov Smirnov 1.094 with a sig level of 0.182 greater than the value $P = 0.05$. Thus it can be concluded that the data on group B of the initial test rubber load exercise and the final test is distributed normally.

Inference Statistical Analysis

Data on the measurement of foot weight training and rubber load against the ability of sickle kicks in Samarinda PSHT martial arts athletes was further analyzed with inference analysis. This inference analysis uses the t-test.

Table 5. *paired samples test* on the results of the initial test experiment and the final test of foot weight training.

Paired Samples test	PD Mean	PD Std Deviation	d. Error Mean	t	Df	Sig (2-tailed)
Initial Test – Final Test	-11,10	2,881	0,644	17,22	19	0,000

Test results:

The significance level of α used for *the two-tailed test* is 5 % each. Based on the comparison of the t count with the t table.

Based on Table 4.5 obtained t the output result is 17.22 with a probability of 0.000. for the *two-tailed test*, the probability number is $0.000/2 = 0.000$. because $0.000 < 0.05/2 = 0.025$ then H_0 is rejected so that H_1 is accepted. It can be concluded that psht Samarinda martial arts athletes in the ability to kick sickle before being given foot weight training and after being given foot weight training is indeed different in detail. Real means that foot weight training is effective in improving the ability of sickle kicks.

Testing the effect of rubber load training on the ability of the sickle kick using the t-test.

The research hypothesis that will be tested is presented as follows :

H_0 : There is no influence on the ability of sickle kicks in PSHT Samarinda martial arts athletes after being given rubber weight training treatment.

H_1 : There is an influence on the ability of sickle kicks in Samarinda PSHT martial arts athletes after being given rubber weight training treatment.

Table 6. paired samples test on the results of the initial test experiment and the final test of rubber weight training.

Paired Samples test	PD Mean	PD Std Deviation	d. Error Mean	t	Df	Sig (2-tailed)
Initial Test – Final Test	-7,900	2,291	0,512	15,41	19	0,000

Test results:

The significance level of α used for the two-tailed test is 5% each. Based on the comparison of the t count with the t table.

Based on Table 4.5 obtained t the output result is 15.41 with a probability of 0.000. for the test two-tailed, the probability number is $0.000/2 = 0.000$. because $0.000 < 0.05/2 = 0.025$ then H_0 is rejected so that H_1 is accepted. It can be concluded that PSHT Samarinda martial arts athletes in the ability to get sickle kicks before being given rubber weight training and after being given rubber weight training is indeed different meaning that rubber weight training is effective in improving the ability of sickle kicks.

Test the difference in the influence of foot weight training and rubber load on the ability of the sickle kick by using the test t two free samples (Independent sample t Test).

Table 7. Independent Sample t Test

Differences in influence	Levene's Test		t-test				
	F	Itself	t	Df	Itself	MD	Std Error
Foot vest Weight Training vs. Weight Training Rubber	1,287	0,264	3,144	38	0,003	3,650	1,161

The t-test of two samples is carried out in two stages, the first stage is to test the variance of the two populations then the second stage is tested to see whether there is a difference in the average population. First, testing whether there is a similarity of variance in the initial data (before being given the exercise) and the end (after being given the exercise), the test used is Levene's test with the F test.

Hypothesis :

H_0 : Both population variances are identical

H_1 : The two population variances are not identical

From table 7 on the t test it can be seen that the sig value of 0.03 is smaller than 0.05 then H_0 decision making is rejected or the two variances are different.

The noticeable difference between the two variances makes users of variance to compare the average population with t test should use the basis of *Equal variance not assumed* (consumption of the two variances is not the same). variance, then the analysis is carried out

using the t test attached to the table 7. This test aims to find out if there is a difference in the influence of foot weight training and rubber load on the ability of sickle kicks Here is the hypothesis:

H₀: No difference in the effect of foot weight training and rubber load on sickle kicking ability

H₁: There is a difference in the effect of foot weight training and rubber load on the ability of sickle kicks

Discussion

Based on the results of research and analysis of data obtained from the sickle kick ability test in pencak silat sports from two groups, then analyzed with a test of the normality and homogeneity of the sample by showing that the data It is normally distributed and has a homogeneous variance. This suggests that both research groups have almost the same abilities in other words nonexistent .

Noticeable differences before doing different exercises. But after these two groups were given an eight-week diving training program or two months of diving, different sickle kick abilities were obtained. This means that it is caused by the treatment given or the exercise program that is applied to the sample for two months.

The effect of foot weight training and rubber weight training on the ability of sickle kicks in PSHT Samarinda martial arts athletes, where the results of the analysis showed that there was a significant influence. This influence arises due to continuous exercise for approximately eight weeks or two months.

The first hypothesis received: There is an influence of foot weight training on the ability of sickle kicks in psht samarinda martial arts athletes. According to the results of the initial test-t test data and the final test data on the ability of the sickle kick in the Samarinda PSHT martial arts athletes in group A for foot weight training, the calculation results were obtained at value observation is greater than the value of t table at a significant level of 95%. This proves that the first hypothesis submitted is accepted at a significant level of 95%. Implications that can be expressed that providing programmatic foot weight training systematically for 24 meetings with details three times per week, it will be able to increase the ability of sickle kicks for PSHT athletes. It can be explained that doing or carrying out this foot weight training, it has effectiveness when carrying it out. Because this exercise is more directed at a movement technique to do a sickle kick, there is the automation of the movement of the sickle kick ability, if this is done following the training program, it will certainly increase the effectiveness of the movement of the sickle kick ability.

The second hypothesis is accepted: There is an influence of rubber weight training on the ability of sickle kicks in PSHT Samarinda martial arts athletes. According to the results of the initial test-t-test data and the final test data of rubber weight training on the ability of sickle kicks in the Samarinda PSHT martial arts athletes in group B for rubber weight training, it turned out to be from the calculation results obtained a value of t observation greater than the value of t table at a significant level of 95%. This proves that the second hypothesis proposed is accepted at a significant level of 95%. Predictions that can be put forward are that giving rubber weight training programmaticly systematically for 24 meetings with details three times per week, will be able to increase the ability of sickle kicks on PSHT Samarinda martial arts athletes. It can be explained that in doing or carrying out exercises This rubber load can have a positive influence on the ability of the sickle kick itself because directly beginner students play on the technique.

The third hypothesis is accepted: There is a significant difference in the influence of foot weight training and rubber load on the ability of sickle kicks in PSHT Samarinda martial arts athletes. As per the results of the t-test data of the final test of the sickle kick ability in the second group of exercise forms, it turned out that the calculation results obtained an

observation t value greater than the tablet value at a significant level of 95%. This proves that the third hypothesis proposed is accepted at a significant level of 95%. Implications can be expressed that these two forms of exercise have a positive influence or improvement on the ability of the sickle kick, but when compared to looking at the results obtained on the average of the final test as well as the statistical testing of unpaired t-tests, then the foot weight training is more efficient. Because in doing this exercise has a higher load level. The process of carrying out foot weight training is oriented towards heavy weight-bearing movements and automatically performs the same movements as doing sickle kicks. So in this exercise is required to be more active to move and control the legs in addition to the physical ability of the limbs to contract to perform the ability of sickle kicks.

The sickle kick technique aims to kick towards the body by using faster leg strength to the opponent's opponent's weakest defensive area. Thus foot weight training has effectiveness and is more efficient in improving the ability of sickle kicking. While rump weight training gives positive development to the technique itself. Therefore, rump weight training has a greater influence on the ability of sickle kicks than rubber weight training, thus rump weight training must be more considered in carrying out the exercise program so that the ability of sickle kicks in athletes Samarinda PSHT is better and increasing again. But the rubber weight training program is not just forgotten and this exercise must also be programmed to support performing sickle kicking abilities on PSHT Samarinda athletes. From the results of this study, the two forms of exercises mentioned above influence the ability of sickle kicks in Samarinda PSHT athletes and rump weight training which is more influential on the ability of sickle kicks in Samarinda PSHT athletes.

Anatomically the muscles involved in the movement of the lower limbs are (Blattner, Stuart E., and Larry Noble, 1979, Jensen, C.R., Gordon W., and B.L. Bengester, 1983): a). Upper limb muscles: gluteus maximus, biceps femoris, semitendinosus, semi membranous, gluteus medius, gluteus minimus, adductor magnus, adductor brevis, adductor longus, gracilis, pectineus, sartorius, rectus femoris, vastus medialis, vastus lateralis. b). Lower limb muscles: gastrocnemius, soleus, anterior peroneus, plantaris, tibial, flexor digitorum longus, extensor digitorum longus, calcaneal flexor. Thus, athletes who do foot weight training have a better sickle kicking ability to load the foot vest within the maximum limit will be very effective in improving the quality of training. which is run. *De Lorme* in 1950 stated that augmented weight-bearing exercises gradually increased the circumference and strength of the arms and thighs. *Dan De Vries* (1980) states that muscles will grow larger if they are trained with a heavy-weight exercise program. This growth is the result of enlargement of each muscle fiber (*hypertrophy*) or an increase in the number of muscle cells (*hyperplasia*). According to *Falls* (1970) that working and practicing earnestly can increase muscle strength and hypertrophy. Furthermore, *Brooks* (1984) asserted that due to the influence of weight training will only increase muscle size (*hypertrophy*), while hyperplasia will only occur until the newborn period. Thus, athletes who do foot vest weight training have a sickle kick speed, but it does not mean that athletes who do not do foot vest weight training do not have a good sickle kick speed.

CONCLUSION

Based on the results of analysis and discussions that have been carried out by researchers show that there is an influence of foot rompi weight training and rubber weight training on the ability of sickle kicks in Samarinda PSHT martial arts athletes, where the results of the analysis show that there is a significant influence. This influence arises due to continuous exercise for approximately eight weeks or for two months. Explained that in doing

or carrying out this foot rompi load exercise, it has effectiveness when carrying it out. Because this exercise is more directed at a movement technique to do a sickle kick, so there is automation of the movement of the sickle kick ability, if this is done in accordance with the training program, it will certainly increase the effectiveness of the movement of the sickle kick ability. Rompi weight training has a greater influence on the ability of sickle kicks than rubber weight training, thus rompi weight training that must be more considered in carrying out the exercise program so that the ability to sickle kick on Samarinda PSHT athletes are better and improving again.

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