

The Effect of Weight Training Exercises on The Explosive Power of The Lemb Muscles of Sakato Pencak Silat Athletes

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Abstract

Background and aim. Pencak silat is a martial art that requires optimal physical condition, particularly leg muscle strength, to support performance during competition. However, observations of Sakato Pencak Silat athletes in Solok Regency indicate that their kicking performance is still not optimal due to limited strength training programs. Therefore, this study aimed to examine the effect of weight training, specifically barbell squat and leg press exercises, on increasing leg muscle strength of athletes.

Methods. This study employed an experimental research design conducted from September to October 2024 in Solok Regency. The sample consisted of 20 male athletes selected using purposive sampling. Data were collected using the standing broad jump test to measure leg muscle strength. Data analysis included normality tests and hypothesis testing using the t-test at a significance level of 0.05.

Results. The results showed a significant improvement in leg muscle strength after the training program. The pretest average score was 2.085 meters, while the posttest increased to 2.396 meters. The t-test result indicated a significant effect ($t = 8.696 > t \text{ table} = 1.729$), confirming that weight training contributed to improved performance.

Conclusions. Weight training, particularly barbell squat and leg press exercises, is effective in increasing leg muscle strength of pencak silat athletes. This training method can be recommended as part of a structured training program to enhance athletic performance.

Keywords: Leg Muscle Power; Pencak Sila; Weight Training.

1. Introduction

Exercise is an important part of human life and is one of the physical needs of every human being. Sport is a form of physical activity of a person that is carried out in various types of sports with various purposes and directions, so that sport is closely related to everyone's social life (Viona Rahma Cahyani, 2024). Sports are also used to improve human physical quality by maintaining health, fitness and achieving high achievements in order to make the country proud. (Shane Noonan-Holohan., 2024)

Pencak silat is a traditional martial art that originated from Indonesia, there is a parent organization of pencak silat in Indonesia known as Indonesia Pencak Silat Association (IPSI) Pencak silat comes from two syllables, namely pencak and silat. Pencak means basic martial arts movements related to the rules. Silat has the meaning of perfect martial arts that originates from pure spirituality,

for personal safety or mutual safety, avoiding self/human beings and reinforcements or disasters (robbery, disease, weeding and everything that is evil or detrimental to society). (Anifah, 2024)(Jeri Indra, 2024) Pencak silat is one of the martial arts that originated from the Indonesian nation, in its movement there are 4 aspects: spiritual value, cultural art value, martial arts value, and sports value which are incorporated into a unit, improving the quality or developing student achievement needs to be carried out in an integrated, systematic, persistent, and sustainable manner (Zulman, 2021).

To achieve maximum achievement in the sport of pencak silat requires specific coaching and special attention. Pencak silat itself must be supported by the components of achievement as stated by Syafruddin in that the ability of a person or athlete in a match or competition is basically determined by four factors, namely: 1) physical

condition, 2) technique, 3) tactics, and 4) mental (psychic) factors. In addition, there are various physical supporting factors such as endurance, coordination, agility, and (Rahmana, 2020) Exercise is a systematic process to improve physical quality with the aim of improving sports performance. Exercise can be very effective when done with a good program. Physical condition is a whole set of components that cannot be separated from each other, the components of the physical condition are determined by strength, agility, agility, endurance, muscle strength, coordination, balance, agility and reaction The training program that is designed (Marde i la, 2024) (Jeiki Haryanto., 2024). To achieve this goal, athletes must have good abilities.

The method to train the strength of the leg muscles in general is to do weight exercises or commonly called *deingan* Weight Training. To improve physical condition and especially improve muscle strength, a person can do exercises using both *inteirnal* and *eiksteirnal* exercises that are done in a systemic, program, and advanced way. (Suharjana, 2013)

Weight training Weight Training is a systematic exercise that uses weight as a tool to

increase muscle strength to achieve the goal of improving the physical condition of athletes, increasing the effectiveness of *ceideira* or for the purpose of fitness. When I (Afif, 2016) in sports that require power in each match or exercise.

Based on the observation that happened to the Sakato Silat Athlete of Solok Regency, that Meireika did not do the right thing. This can be seen in the regional championships carried out by Payakumbuh in 2023 and at the Peincak Silat Bareih Solok Championship from 05 to 08 October 2023 at Gor Sinapa Alimin, Solok City, Peincak Silat Sakato athletes rarely do *teindangan* if this happens at the time of the competition as a way of *teirus* *meineirus*, the athlete's performance will not increase if left unchecked, increasing the maximum prediction that is expected to be difficult to achieve, For this reason, the researchers also conducted research to see the Barbeill Squat Exercise and the Leig Preiss Exercise in front of the Leg Muscle Strength of the Peincak Silat Sakato Athlete Solok Regency.

2. Materials and Method

This research uses the *eikspeirimein* research method, carried out to find out the meaning of the *peirlakuan*. *Eikspeirimein* research is a research method that can be used to help students behave in front of others under uncontrolled conditions. Te (Sugiyono, 2013) *ssrhieetgengaE* held at Gor Batu Batupang Koto Baru, Solok Peineilitian Regency and was held on 29 September - 28 October 2024. Instrumental use theist Standing Board Jump to measure the strength of the leg muscles (Ismaryati, 2008). Research was carried out with the initial

thesis and the final thesis. The data analysis technique uses the normality test and continues with the t-test.

The population in this study was 48 athletes and the researchers focused on male athletes with a total of 20 people. The sampling technique is used to use the *purposivei* sampling technique based on the purpose of the sample sampling (Sugiyono, 2013). So the sample of this research is about 20 male athletes.

3. Results and Discussion

Results

Data Description

Leek Teist Standing Board Jump

Peingaruh *meitodei* weight training training *teirfacing* the strength of the leg muscles of Peincak Silat Sakato athlete Solok Regency, from the results of the *preiei* teist standing board jump in the

teireindah distance of 1.6 m and the height value of 2.42 m, the average is 2.085 and the standard deviation is 0.2575. For the *jeilas* *leibih* can be seen in the table below:

Table 1. Leek Teist Standing Board Jump

Ability Level	Deep Score For Men	Fa (N)	Frequency
Perfect.	>2.50 m	0	0
Excellent	2.41-2.50 m	0	0
Good (Above Average)	2.31-2.40 m	5	25%
Seidang (Average)	2.21-2.30 m	3	15%
Less (Below Average)	2.11-2.20 m	5	25%
Very Less (Jeileik)	<2.10 m	7	35%
	Sum	20	100%

Based on the table above, according to the results of the assessment of the preiei teist training of Weight Training, 5 athletes (25%) in the category are good (above average), 3 athletes (15%) in the category of seidang (average), 5 athletes (25%) in the category of less (below average), and 7 athletes (35%) in the category of very poor (jeileik). And for the Good (above average) category and the very good category are not found.

Post Teist Standing Board Jump

Peingaruh meitodei weight training training teirhafacing the strength of the leg muscles of Peincak Silat Sakato athletes, Solok Regency, from the results of the post teist standing board jump the distance of teireindah is 1.98 m and the height value is 2.65 m, the average is 2.396 and the standard deviation is 2.3960. For the leibih jeilas, you can see in the table below:

Table 2. Post Teist Standing Board Jump

Ability Level	Score In m For Men	Fa (N)	Frequency
Perfect.	>2.50 m	7	35%
Excellent	2.41-2.50 m	5	25%
Good (Above Average)	2.31-2.40 m	2	10%
Seidang (Average)	2.21-2.30 m	3	15%
Less (Below Average)	2.11-2.20 m	1	5%
Very Less (Jeileik)	<2.10 m	2	10%
	Sum	20	100%

Based on the table above, according to the results of the post-theist assessment of Weight Training training, 7 athletes (35%) were in the perfect category, 5 athletes (25%) in the category of very good, 2 athletes (10%) in the category of good (above average), and 3 athletes (15%) in the category of seidang (average), 1 athlete (5%) in the

category of less (below average), and 2 athletes (10%) in the category of very poor (jeileik).

Prerequisite Test Results

Normality Test

After doing a t-theist, the normality test was first carried out to find out whether the beirasal

data from the normal distribution or not should be used to use the lilliefors test with a significant level = 0.05. The calculation of the results of the

lilliefors test can be seen in appendices 3, 4 and pages 74, 75 and 77. The results are presented in this table:

Table 3. Normality Test

Variable	Keilompok	Count	Ltabel	Scarcity
Weight training	Leeks are pestering	0,126	0,19	Usual
A Sense of Urgency	Post Teases	0,186		
Leg muscles				

In the table above, it can be seen that the pretest and post test values are the result of Leil from Ltabel, so it can be concluded that the data is normally distributed.

requirements for hypothesis testing. The statistical test used was t-test with a significant level of 0.05. The hypothetical results can be observed in the table below:

Hypothesis Test

Once the analysis requirements are tested and all the data variables are tested to meet the

Table 4. Hypothesis Test

Leg Muscle Relaxation Strength	Meian	SD	Stuttgart	ttabel	Test Results	Keit
Leeks are pestering	2,085	0,2575	8,696	1,729	Significant	H Accepted
Post Teases	2,3966	2,3960				

Based on the tabel, it can be said that the Weight training exercise can be used to increase the strength of the leg muscles ($t_{cal} = 8,696 > t_{tabel} = 1,729$) with the hypothesis proposed accepted. From the statement of the test result it can be drawn that the interval training has a significant effect on

the increase in the strength of the leg muscles in the athletes of the sakato silat athletes of Solok regency. The calculation of the results of the hypothetical test can be seen in appendices 5, 6 and pages 77 and 78.

Discussion

Based on the results of the hypothesis test analysis, the price of ttabel ($8,696 > t_{tabel} = 1,729$) was based on the significance level of $\alpha = 0.05$ in the number of samples of 20. So it can be concluded that H_0 was rejected and H_a was accepted. Dengan demikian exercises the strength of the leg muscles to provide a significant performance in front of the athletes of the Sakato Silat Sakato District. The results of the research on weight training in a short way can be explained that it can be seen that it can increase the strength of leg

muscles in athletes who are peincak silat sakato in Solok Regency as many as 16 times to participate in weight training as many as 16 times.

Based on the results of the research, it is evident that weight training exercises lead to an increase in the strength of the leg muscles. According to (Ihsan, 2022) in order for the exercise to reach the desired degree, an exercise must follow the rules of the same exercise: the duration of the exercise starts from 20-60 minutes, the intensity is between 70-80% of the RHM, the frequency of the

exercise is between 3-5 days a week and the type of exercise must match the components of the skill to be balanced.

As for the training Weight Training Those that can increase the strength of leg muscles include: exercises Barbeill squad, Leig Preiss and others. Due to the large number of trainings, the writer only wants to take 2 exercises that will be applied to athletes who are active in the Sakato Martial Arts Association, namely training Barbeill squad, Leig Preiss The beirfocus on strength and agility The aim is to increase the strength of strong muscles, swings and swings. Other reasons pe (Muhammad Zikri, 2024) Exercises or exercises that use external weight lifters on their own and achieve goals, exercises using external weight gain a lot of flexibility for a person to do a variety of exercises. A person can do a variety of exercises that can make it easier to train the desired muscles. Muscle strength is the ability of a group of muscles to fight the weight in one effort (Monica, 2023).

Muscle muscles can be trained, including leg muscles, back muscles, and leingan muscles which have peinting muscles in daily activities. If a person has weak muscles, it can lead to problems such as easy leilah, prone to injury, and less than optimal posture. Therefore, it is a good idea to do weight exercises to increase muscle mass, peirlu weight exercises in combination with seipeirti exercises using barbeil squats and leig preiss exercises.

Weight training or weight training is a technique of exercise that is carried out in a systematic way by using weight to improve muscle strength. Weight training can improve the muscles,

so that the muscles become easier to adapt and become stronger. In addition, weight training can also be: Increase the degree of fertility, increase the quality of the body, protect the heart organ by lowering blood pressure and improve blood circulation, Strengthening the bones and tissues of the body. Weight training can be done with two types of training, namely Freiei Weight and Weight Machinei.

Freiei Weight is a training exercise that uses the beiban of the beibas, seipeirti dumbbeill or Barbeill, which is one of the weights used by the author to train the strength of the leg muscles. One (R Mardeila, 2016). Squirt Weight Machinei is a weight exercise that uses the help of a pulley or a seijeiniis. From Weight Training We can train the muscles we want to build. Weight Training To train with good manners.

4. Conclusion

Based on the results of the study, it was found that the training of weight training was proven to be quite good in the face of an increase in leg muscle poweir in members of the Peincak Silat Sakato Athlete of Solok Regency. From the pre-theist data, the average teirleitak is 2,085 and the post-theist is 2,396. The Weight Training training program can be seen based on the average training of 0.311. From the average training of the Weight Training is quite good from the improvement of seibeilum and after the tretiatmeint. In the hypothetical test value ($t_{cal} = 8,696 > t_{tabel} = 1,729$).

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