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The Relationship Between Leg Muscle Power And Waist Flexion On Sickle Kick Ability In Male Students Of Pencak Silat Extracurricular SMAN 1 Terusan Nunyai Central Lampung Regency

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Abstract

This study aims to find out how much of a relationship between leg muscle power and waist flexibility on the ability to kick a sickle in pencak silat extracurricular male students at SMA Negeri 1 Terusan Nunyai. This study uses a quantitative method with a correlational design. Data was collected through the standing long jump test, the sit and reach test, and the sickle kick test. The research sample consisted of 20 male students. The data analysis technique used in this study is statistics through SPSS 23 application correlation. The results showed a significant relationship between leg muscle power of 0.528 > R table 0.443, and waist flexibility of 0.341 < R table 0.443, with sickle kick ability of 0.623 > R table 0.443. Both free variables contribute significantly to improved sickle kick performance.
Keywords: *Waist Flexibility, Sickle Kick Ability, Pencak Silat, Leg Muscle Power*

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INTRODUCTION

Sport is derived from the word "olah," meaning action, deed, or behavior. The word "raga" means body, connoting training oneself through bodily movements. Therefore, "sport" refers to bodily movement or physical activity. Exercise is part of everyday human activities to foster physical and mental health. It makes a positive and tangible contribution to improving human health. It also plays a role in enhancing the nation's ability to implement a sustainable development system.

Pencak Silat is a cultural characteristic and a reflection of the Indonesian people's hereditary behavior. This is evidenced by the natural way humans defend themselves to survive. These natural conditions and circumstances indirectly influence the diversity of martial arts movements. Pencak Silat is unique compared to other martial arts in that it comprises four patterns: 1) the stance, 2) the step pattern, 3) the attack-defense pattern, and 4) the return to the stance. These four patterns form a unified movement that forms a series of movements, creating a specific movement pattern.

In pencak silat, there is a crescent kick technique. Sudiana and Sepyanawati (2017:55) state that a crescent kick is a kick that travels in a semicircle, targeting the entire body, using the instep of the foot. The crescent kick, as its name suggests, is a kicking technique whose trajectory forms a semicircle. Its function is similar to a sickle (sickle), swinging from the outside to the inside. Analyzing the technique, the impact on the target occurs from the outside to the inside, hitting the instep.

Leg muscle power is a person's ability to perform an action with maximum force, using the most effort in the shortest possible time. Leg muscle power is a crucial factor in front kicks in martial arts; the better the leg muscle power, the better the athlete's kick. Harsono, in Jumaking (2020:125), states, "Power is the ability of muscles to direct maximum force, in a very short time." Essentially, power is a person's ability to exert maximum force in the shortest possible time, so its primary elements are strength and speed. The concrete manifestation of muscular power is reflected in the ability to output using high strength and speed in a single, unified movement. Examples include jumping and kicking.

Seeing this from the results of the observations, the author became interested and considered it necessary to conduct scientific research on: "The Relationship between Leg Muscle Power and Waist Flexibility and the Ability to Kick Sickles in Extracurricular Male Students of Pencak Silat at SMA Negeri 1 Terusan Nunyai, Central Lampung Regency".

METHOD

The method used is a survey with data collection techniques using tests and measurements. This measurement test was conducted to obtain appropriate data, the data obtained in this study are the results of measurements of Leg Muscle Power and Waist Flexibility as well as Sickle Kick Ability. The analysis technique used in this study is product moment analysis. The correlational method is a study that aims to describe an event or incident that is taking place at the time of the research without considering before and after. Analyzed using Pearson product moment analysis discusses the relationship between the dependent variable and two or more independent variables.

The population in this study was 20 male students participating in the pencak silat extracurricular activity at SMA Negeri 1 Terusan Nunyai. The sampling technique used was total sampling, which involves taking the entire population as a sample. Therefore, the sample size for this study was 20.

The research took place at SMA Negeri 1 Terusan Nunyai, Central Lampung, Lampung. The duration of the study was approximately equal to or greater than the duration of the study.

This study used dependent and independent variables. The dependent variable is a variable whose values depend on other variables and is the variable whose value is explained, symbolized by (Y). The dependent variable in this study was crescent kick ability. The independent variable is a variable whose values are independent of other variables, and is useful for predicting and explaining the value of the variable, symbolized by (X). The independent variables in this study were leg muscle power (X1) and flexibility (X2). To obtain data on the three variables above, three tests were given, namely the leg muscle power test, namely the standing long jump test / broad jump, the flexibility test, namely the sit and reach and the sickle kick test.

Data analysis techniques are used to answer the previously proposed hypothesis. Before conducting the hypothesis test, a prerequisite test is first carried out using the normality and homogeneity tests. The data analysis techniques used are the Normality Test, Homogeneity Test, and Hypothesis Test. Thus, the raw data is converted into standard data (T score). The data analyzed are independent variable data, namely (X1) leg muscle power, (X2) arm muscle power, waist flexibility (X3) and dependent variables (Y1) speed and (Y2) volleyball jump service accuracy. Because the sample of the athlete study was 20 people, the statistical calculations were calculated using SPSS 23. (Sugiyono, 2013: 228): The correlation formula using SPSS 23 looks for the correlation of the independent variable X to Y.

RESULTS AND DISCUSSION

Result

Data Description of the Relationship between Leg Muscle Power, Waist Flexibility and Crescent Kick Ability

Table 1. Data Description of the Relationship between Leg Muscle Power, Waist Flexibility and Crescent Kick Ability

Result	Variable		
	Leg Muscle Power (X1)	Waist Flexibility (X2)	Scythe Kick (Y)
N	20	20	20
Sum	41,73	729	410
Average	20,865	36,45	20,50
SD	10,708	2,837	1,987
Min	1,82	32	41
Max	2,24	18	24

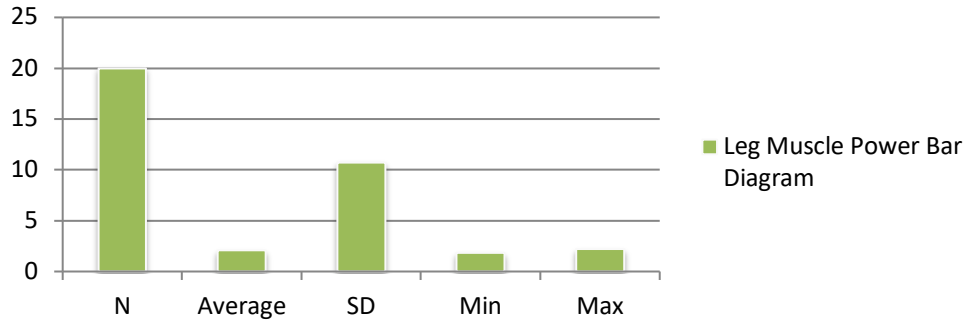

Figure 1. Leg Muscle Power Bar Chart

The results of the study on the leg muscle power variable test on male students of the pencak silat extracurricular at SMA Negeri 1 Terusan Nunyai showed that the total value was 41,73, the average value of leg muscle power was 20,865, the standard deviation value of leg muscle power was 10,708, and the maximum value was 2,24 and the minimum value was 1,83.

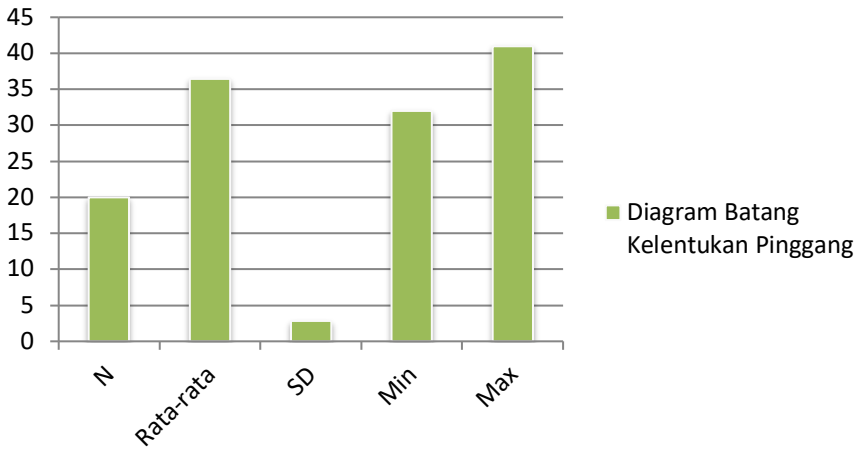

Figure 2. Waist Flexibility Bar Chart

The results of the study on the waist flexibility variable test on male students of the pencak silat extracurricular at SMA Negeri 1 Terusan Nunyai showed that the total score was 729, the average waist flexibility score was 36,45, the standard deviation score of waist flexibility was 2,837, and the maximum score was 41 and the minimum score was 32.

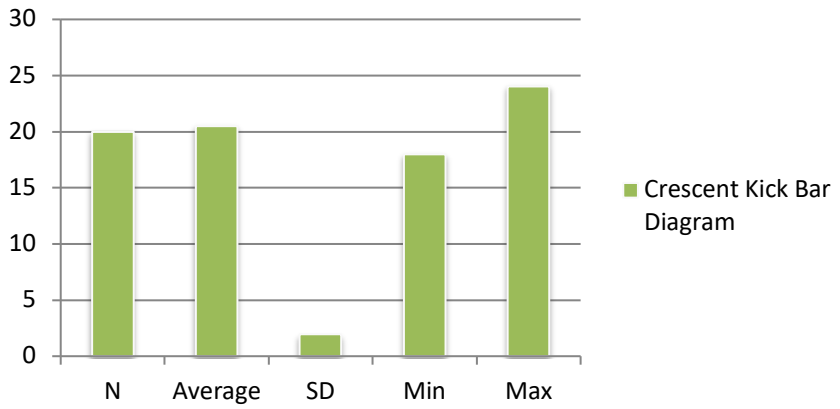

Figure 3. Crescent Kick Bar Diagram

The results of the research on the variable test of the sickle kick ability of male students in the pencak silat extracurricular at SMA Negeri 1 Terusan Nunyai showed that the total score was 410, the average score of the sickle kick ability was 20,50, the standard deviation score of the sickle kick ability was 1,978, and the maximum score was 24 and the minimum score was 18.

Data analysis

1. **Normality Test**

Table 2. Normality Test Results

Variable	L. count (sig.)	Sig (0,05)	Conclusion
Leg Muscle Power	0,325	0,05	Normal
Waist Flexibility	0,086	0,05	Normal
Scythe Kick	0,293	0,05	Normal

From the data in the table above, it shows that the L Sig value > 0.05, so it can be concluded that all the variable data is normally distributed.

2. Linearity Test

Table 3. Linearity Test Results

Variable	F Sig	Sig (0,05)	Conclusion
(X1) – (Y1)	0,765	0,05	Linear
(X2) – (Y1)	0,202	0,05	Linear

The table above shows that the Leg Muscle Power (X1) variable and Scythe Kick (Y1) ability show an F-Sig value > 0.05. Therefore, it can be concluded that the Leg Muscle

Power (X1) and Scythe Kick (Y1) ability data are linear. The table above shows that the Waist Flexibility (X2) and Scythe Kick (Y1) ability show an F-Sig value > 0.05. Therefore, it can be concluded that the Waist Flexibility (X1) and Scythe Kick (Y1) ability data are linear.

3. Homogeneity Test

Table 4. Homogeneity Test Results

Variable	Mark Sig	Sig (0,05)	Conclusion
(X1) – (Y1)	0,629	0,05	Homogen
(X2) – (Y1)	0,166	0,05	Homogen

The table above shows that the Leg Muscle Power (X1) variable and Scythe Kick Ability (Y1) have an F-Significant value > 0.05. Therefore, it can be concluded that the data between Leg Muscle Power (X1) and Scythe Kick Ability (Y1) are homogeneous. The table above shows that the Waist Flexibility (X2) variable and Scythe Kick Ability (Y1) have an F-Significant value > 0.05. Therefore, it can be concluded that the data between Waist Flexibility (X1) and Scythe Kick Ability (Y1) are related.

4. Hypothesis Testing

a. Relationship between Leg Muscle Power (X1) and Scythe Kick Ability (Y1):

Table 5. Hypothesis Testing Results

Variable	R Count	R Table	Conclusion
(X1).(Y1)	0,528	0,443	Signifikan

b. Relationship between Waist Flexibility (X2) and Scythe Kick Ability (Y1)

Table 6. Hasil Uji Hipotesis 2

Variable	R Count	R Table	Conclusion
(X2) .(Y1)	0,341	0,443	Not Significant

c. Relationship between Leg Muscle Power (X1) and Waist Flexibility (X2) and Scythe Kick Ability (Y1)

Table 7. Hypothesis Test Results

Variable	R Count	R Table	Conclusion
(X1.X2) – (Y1)	0,623	0,443	Significant

Discussion

Based on the research findings above, which aimed to determine the relationship between leg muscle power and waist flexibility and sickle kick ability in male extracurricular students at SMA Negeri 1 Terusan Nunyai, further study is needed to interpret the relationship between the analysis results and the theories underlying this research, both from previous studies and scientific articles. This explanation is necessary to determine the suitability of the proposed theories with the research findings. When these results are linked to the framework and underlying theories, this study essentially supports the existing theories.

From the results of the first hypothesis test, it can be concluded that there is a significant relationship between leg muscle power and sickle kick ability in male extracurricular pencak silat students at SMA Negeri 1 Terusan Nunyai. This means that students with good leg muscle power will also perform well in sickle kicks. Power is a combination of strength and speed.

The relationship between leg muscle power and the sickle kick results in a kick with high muscle power, allowing the sickle kick to be executed quickly, making it difficult for opponents to anticipate. Impact strength: Muscle power influences the force of the kick when it hits the target. The greater the muscle power, the greater the force generated. Movement efficiency: The sickle kick requires coordination between the leg, hip, and upper body muscles. Muscle power helps produce efficient movements without losing power.

From the results of the second hypothesis test, it was concluded that there was an insignificant relationship between waist flexibility and sickle kick ability in male students participating in the pencak silat extracurricular activity at SMA Negeri 1 Terusan Nunyai. This means that if a student has good waist flexibility, it will also be followed by good sickle kick performance.

From the results of the third hypothesis test, it was concluded that there was a significant relationship between leg muscle power and waist flexibility and sickle kick ability in male students participating in the pencak silat extracurricular activity at SMA Negeri 1 Terusan Nunyai. Developing good leg muscle power and waist flexibility will have a positive effect on the athlete, particularly in maximizing the athlete's sickle kick during competition.

CONCLUSION

Based on the research results and discussion, this study can be concluded that: There is a significant relationship between Leg Muscle Power and Scythe Kick ability in male students participating in the pencak silat extracurricular activity at SMA Negeri 1 Terusan Nunyai.

There is an insignificant relationship between Waist Flexibility and Scythe Kick ability in male students participating in the pencak silat extracurricular activity at SMA Negeri 1 Terusan Nunyai. There is a significant relationship between balance and Leg Muscle Power and Scythe Kick ability in male students participating in the pencak silat extracurricular activity at SMA Negeri 1 Terusan Nunyai.

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