Effect Leg Muscle Explosive Power, Flexibility Waist and Concentration of Circular Kick Shield Yourself Pencak Silat Athlete of Cement City Padang

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***Abstract*: - Based on the observations of the Pencak Silat Shield Semen Padang Padang found that the circular kick owned still low. This study aims to determine the direct influence of exogenous with endogenous ie find the magnitude of the direct influence Explosive Power limb muscles, flexibility Waist And Concentration Of Circular kick. This research is descriptive and quantitative approach path analysis (path analysis). The population in this study is Pencak Silat Athletes Shield Semen Padang Padang which numbered 60 people. The sampling technique is done by sampling saturated, with a sample size of 30 people. Data was collected using Standing Broad Jump to measure the explosive power leg muscle, Sit and Reach test to measure flexibility waist, Concentration Grid test to measure the concentration and circular kicks test to measure the circular kick. The result showed that: (1) Power Limb Muscle Explosive direct and significant impact on the circular kick by 12.96%. This means that the stronger a martial arts athlete, the better kick Circular optimally. (2) Waist .Kelentukan direct and significant effect on the circular kick by 12.67%. (3) The concentration of influence directly and significantly to the circular kick by 2.04%. (4) Power of leg muscle explosive indirect effect of the circular kick through the concentration of 14.94%. (5). Waist flexibility indirect effect of the circular kick through the concentration of 15.44%. (6). Daya explosive leg muscle, flexibility and concentration Waist influence simultaneously to the circular kick by 27.67%.**

Keywords: **Limb Muscle Explosive power, flexibility, concentration, kicks Coiling**

I. INTRODUCTION

A good achievement and the maximum should be supported by the planned development as well as the maximum anyway. One of the many sports achievements include the following Pencak Silat. Pencak Silat is a martial art of Indonesia that has been handed down. Same with the achievements of other sports, martial arts sport requires training to acquire and develop the talents and achievements of athletes and prospective atlitnya in order to get maximum results are satisfactory. Pencak silat a sport that has often been the name of Indonesia in the international sports arena like the Sea Games, Asian Games, World Championships and other international championships. To improve the sport of martial arts to a higher level recently martial which is the umbrella organization World Pencak Silat Pencak Silat are working to be able to participate in other more prestigious Championship is the Olympics. One of them is the University Shield Semen Padang founded by Raden Mas Soebandiman Dirdjoatmodjo, Duke's son Sultan Paku Alam on July 2, 1955 in Surabaya, East Java. And spread over Indoonesia. Universities are also scattered in West Sumatra. Branch colleges Shield Semen Padang in Padang. Until now these institutions still exist and always bring new athletes. In its heyday, before college silat athletes Shield Semen Padang often become ambassadors of good martial arts sport branches at regional, national and international levels.

From the observations of researchers in the field athlete achievement Shield Semen Padang unit Padang representing the city of Padang on PORPROV 2014 in Dharmasraya, Hervan class A men's category matches adults get 2nd place, Mahadi class B men's category of games adults lost in the preliminary round, Heri Gunawan C grade son mature game category to get the champion 3. in PORPROV 2016 in Padang Ikwan Fadil games category C class adult son get 3rd place, Mahadi class B games category adult son lost in the preliminary round. In PORPROV 2018 in Padang Pariaman, Hervan class A games category adult son lost in the preliminary round, Ali Rashid class B games category adult son lost in the preliminary round, the E class Yogi games category adult son lost in the preliminary round, Achievement athlete Semen Padang Shield is almost no increase in every championship that follow. Associated with the above, there are four main factors that determine performance in sports, the physical condition factors, factors techniques, tactics, and mental (Syafruddin, 1999: 24). Achievement of martial arts in Shield has not been properly achieved and maximized. Many factors can affect his achievement, both from the athletes themselves as the physical, technical and tactical, mental, achievement motivation, nutrition, customs practice, personal or external factors such as coaches, facilities and infrastructure practice, support managers, teachers and parents as well as the environment. Based on the previous description where the decreased performance of athletes of martial arts Shield Semen Padang Padang affected by the concentration kick circular they have not good so often experiencing overwhelmed during the attack kicks circular, opponents easily anticipate kick and catch the feet then drop and opponents earn points three of the drop. Suspected causes is still weak elements of the physical condition, especially in the leg muscle explosive power, flexibility and coordination.

Concentration is the fundamental physical components, so that the concentration was a determining factor in sports such as numbers sprinting, swimming, sports games and martial arts. concentration is the ability to perform similar movements in a row in the shortest possible time or ability to travel a distance shortest (Sajoto, 1988: 21). Definition of concentration is also strengthened by Harsono (1988: 216) states that concentrations are components to perform similar movements in a row in the shortest possible time or the ability to cover the distance in the shortest possible time.

According to Lubis (2014: 12) kicks circular 'circular is an attack that uses a foot and leg, its trajectory towards the front with the position of the body facing forward, with the base of the toes kenaannya part in targeting heartburn and chest. According Djundab (1999: 13) is a circular kick is one technique that attacks using the tool penyasar leg heel toe in. Referred to the explosive power is one component biomotorik important in sports, because the explosive power will determine how hard to hit, how far to throw, how high jump, how fast to run, and so on (Arsil, 1999: 71). Many sports that require explosive power to be able to perform its activities properly. In some sports such as soccer, volleyball, basketball, athletics, boxing, gymnastics and others are activities that require explosive power really well in practice. Jonath and Krempel in Syafruddin (2011: 102) defines explosive power as the ability of a combination of strength with speed is realized in the form of the muscle's ability to cope with the burden of high contraction speed.

II. METHODS

The method used in this research is quantitative method by using path analysis approach (Path Analysis). Where the research was conducted in Indarung Unit Pencak Silat Athletes exercise Shield Semen Padang Padang. The time the research was conducted in January 2020. The study population was Pencak Silat Athletes Shield Semen Padang Padang which numbered 60 people. The sampling technique used is the technique of "purposive sampling. Thus, the sample in this study amounted to 30 people. Circular kick the data collection instruments measured how fast an athlete can kick sandsack for 10 seconds. Tests flexibility with Sit and Reach and Explosive Power limb muscles with Standing Broad Jump. Test Concentration Concentration by Test Grid.

III. RESULT AND DISCUSSION

1. Coiling Kick

Coiling kick variable data collected through a circular kick test samples of the 30 people. From the results of measurement and data processing kick Circular seen the value of the highest attainable athlete is 22 and the lowest score is 13. Subsequently obtained arithmetic mean value (mean) of 17.57. Coiling kick athletes of measurement obtained standard deviation (standard deviation) of 1.91,

Table 1. Distribution of Frequency Variable Circular kick (Y)

Category	interval	Frequency (f)	Percentage (%)
Very Low (SR)	≤ 14.7	1	3.33
Low (R)	14.7 to 16.6	9	30.00
Medium (S)	16.6 to 18.5	12	40.00
Good (B)	18.5 to 20.4	6	20.00
Very Good (SB)	≥ 20.4	2	6,67
amount		**30**	**100**

Table 1 shows that of the 30 athletes who obtain a circular kick with as much 1orang ≤14,7 value (3.33%), which has a value of 14.7 to 16.6 were 9 people (30%), which mememiliki value 16.6 to 18.5 12 people (40%), which has a value 18.5 to 20.4 as many as six people (20%), which has≥ 20.4 as many as 2 (6.67%) ,. For more details Circular athletes kick variables can be seen in the image histogram below:

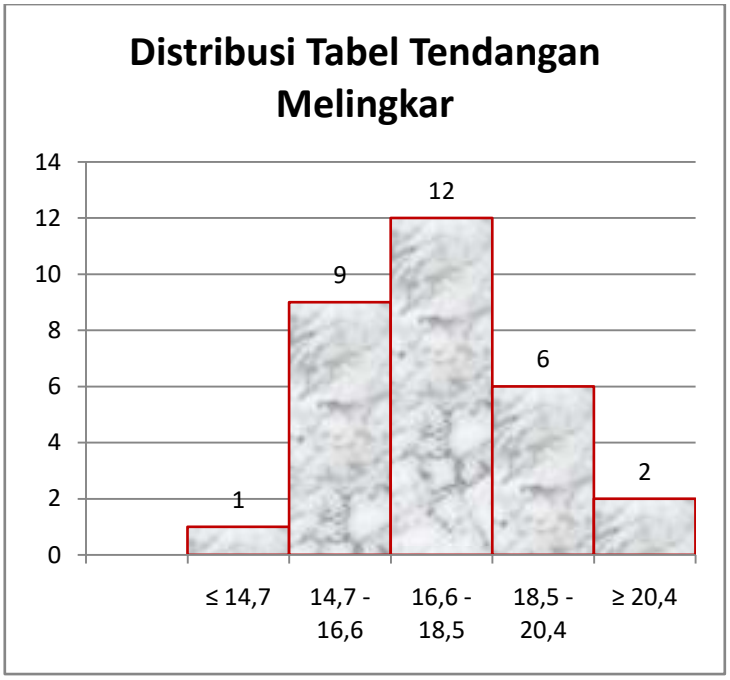

Figure 1. Histogram kick Circular (Y)

2. Explosive power Leg Muscles

Data variableExplosive power is collected via tests Limb Muscle Power Explosive Leg Muscles use Standing Broad Jump to 30 samples. Fromthe measurement results seen Explosive Muscle Power Limbs value of the highest attainable athlete is 240 cm and the lowest score is 165 cm. Subsequently obtained arithmetic mean value (mean) of 198 cm. Then from the Explosive Muscle Power measurement test athletes Limbs obtained standard deviation (standard deviation) of 17.38.Explosive Power distribution data results limb muscles can be seen in the following table:

Table 2. Distribution of Variable Frequency Power Explosive Athletes Leg Muscles

Category	interval	Frequency (f)	Percentage (%)
Very Low (SR)	≤ 172.2	1	3.33
Low (R)	172.7 s / d 189.7	8	26.67
Medium (S)	189.7 s / d 207.1	8	26.67
Good (B)	207.3 s / d 224.5	12	40.00
Very Good (SB)	≥ 224.6	1	3.33
amount		**30**	**100.00**

The table above show that of measurement of 30 athletes, Explosive Muscle Power test results Limbs with 172.2 total score ≤ 1 (3.33%), the test results Limb Muscle Power Burst value172.7 s / d 189.7 8 people (26.67%), the test results Limb Muscle Power Burst value 189.7 s / d 207.1 8 people (26.67%), the test results Limb Muscle Power Burst value 207.3 s / d 224.5 12 people (40%) and test results Limb Muscle Power Burst value 224,6sebanyak ≥ 1 (3.33%).For more details variable Explosive Power limb muscles can be seen in the image histogram below:

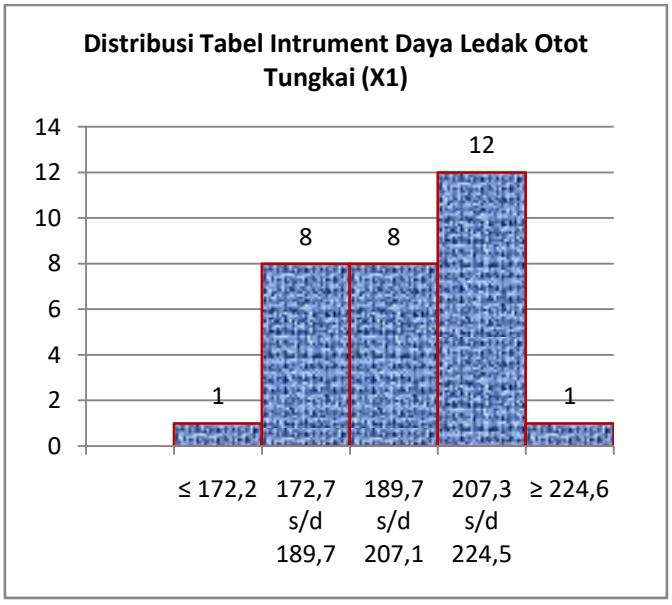

Figure 2. Histogram Limb Muscle Power Explosive Athletes

3. *Waist flexibility*

Data variableWaist flexibility collected through the test of sit and Ritch to 30 samples. From the results of measurement and data processing flexibility Waist seen scores of the highest attainable athlete is 17 and the lowest score was 10. Furthermore, the average values obtained arithmetic (mean) of 14.47. Then from athletes Waist measurement flexibility obtained standard deviation (standard deviation) of 1.96.Waist flexibility of data distribution results can be seen in the following table:

Table 3. Variable Frequency Distribution flexibility Waist Athletes

Category	interval	Frequency (f)	Percentage (%)
Very Low (SR)	≤ 11.5	1	3.33
Low (R)	11.5 s / d 13.5	8	26.67
Medium (S)	13.5 s / d 15.4	9	30.00
Good (B)	15.5 s / d 17.4	8	26.67
Very Good (SB)	≥ 17.4	4	13.33
amount		**30**	**100**

The table shows that of the 30 athletes who gain flexibility waist with a total value of 11.5 ≤ 1 (3.33%), which have value11.5 s / d 13.5 8 people (26.67%), which mememiliki value 13.5 s / d 15.4 as many as 9 people (30%), which has a value 15.5 s / d 17.4 8 people (26.67%) and athletes who gain flexibility with a value ≥ 17.4 Waist much as 4 people (13.33%). For more details Waist athlete variable flexibility can be seen in the image histogram below:

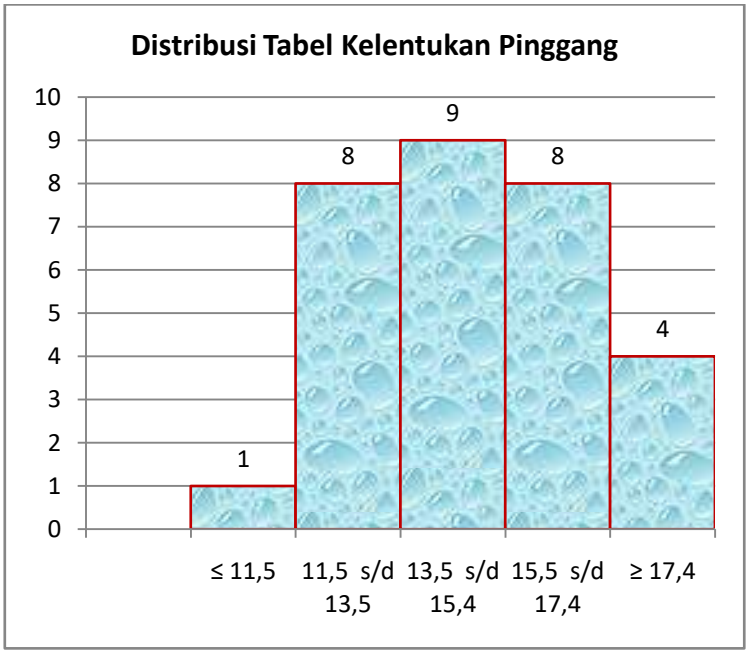

Figure 3. Histogram flexibility Waist Athletes (X1)

4. *Concentration*

Concentration variable data collected through Grid Concentration Tests on 30 samples. From the measurement resultsvisiblescores the highest possible concentration of athletes is 20, and the lowest score is 10. Nextobtained by the arithmetic mean value (mean) 15.53. Then the athlete concentration measurements obtained from the standard deviation (standard deviation) of 2.50.This concentration distribution data results can be seen in the following table:

Table 4. Variable Frequency Distribution Concentration Athletes

Category	interval	Frequency (f)	Percentage (%)
Very Low (SR)	≤ 11.8	1	3.33
Low (R)	11.8 s / d 14.3	9	30.00
Medium (S)	14,3 s / d 16.8	9	30.00
Good (B)	16.8 s / d 19.3	8	26.67
Very Good (SB)	≥ 19.3	3	10,00
amount		**30**	**100**

The table above show that of the 30 athletes who have a concentration value ≤ 11.8 as many as 1 person (3.33%), which has a value 11.8 s / d 14.3 as many as 9 people (30%), which has a value 14,3 s / d 16.8 as many as 9 people (30%), which has 16.8 s / d 19.3 as many as 8 (26.67%), andwhich has a value of ≥ 19.3 as many as three people (10%). For more details, variable concentrations of these athletes can be seen in the image histogram below:

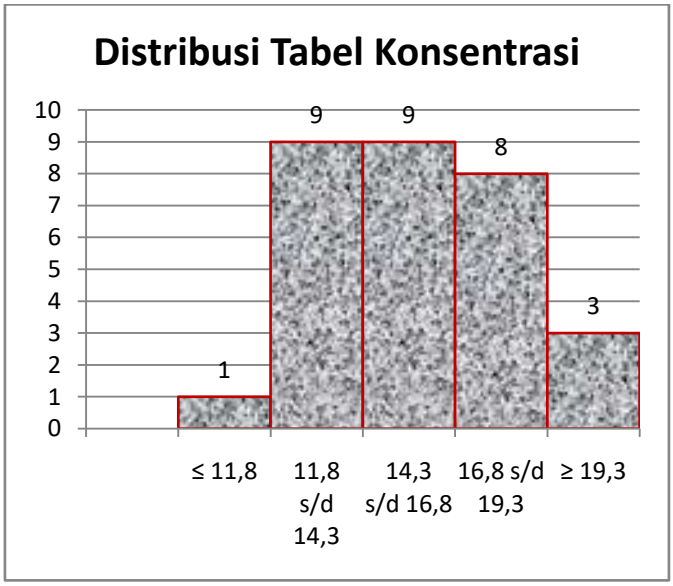

Figure 8. Histogram Concentration Athletes

Normality test is done on the variable use Error Estimate Normality Test with significance level α = 0.05, the testing criteria is that H0 is rejected if L0 obtained from observational data and vice versa exceeds Lt Lt H0 if greater than L0 can be simply stated as follows:

Table 5. Summary of Research Data Normality Test Results

variables	N	Lo	Lt	Conclusion
X1 to Y	30	.0975	.1610	Normal
X2 to Y		.0566		
X3 to Y		.1074		
X1 to X2		.0819		
X2 to X3		.0669		

Information:

n = Number of samples
L0 = Value Lobesrvasi
Lt = Value Ltabel

Linearity test is a test conducted to see whether each variable data Explosive Power limb muscles, waist flexibility, and concentration tends to form a linear variable circular kick Shield Pencak Silat Athletes Semen Padang.Hatested in this case is data Explosive Muscle Power Limbs (X1), flexibility Waist (X2), concentration (X3), has a linear effect on the kick Circular Shield Pencak Silat Athletes Semen Padang. Testing criteria areHaaccepted if the sign value> 0.05 probability value. Summary linearity test can be seen in the table, while the analysis of the test can be found in appendix

Table 6. Linearity Test Results Variable Circular kick (Y) on the variance Explosive Muscle Power Limbs (X1), flexibility Waist (X2) and concentration (X3)

Linearity test	**value α**	**Sig.**
X1 with Y	**0.05**	**0.297**
X2 with Y		**0.328**
X3 with Y		**0,438**
X1 to X3		**.560**
X2 with X3		**.621**

1) In the calculation results of path analysis, it was found that there is a direct effect Explosive power leg muscle (X1) to kick Circular (Y) Athletes Pencak Silat (ρyx1) = 0,363 and the value of significance (sig) = 0.037 which is smaller than the probability value (α) = 0.05. Turns track direct effect of leg muscle explosive power to kick Circular Shield Pencak Silat Athletes Semen Padang is proven and acceptable means. 2) In the calculation results of path analysis, it was found that there is a direct effect of flexibility Waist (X2) to kick Circular (Y) athlete martial arts (ρyx2) = 0.356 and the value of significance (sig) = 0.044 which is smaller than the probability value (α) = 0.05. Turns flexibility Waist direct and significant effect on the circular kick. 3) In the calculation results of the path analysis, found that there is a direct effect concentration (X3) to kick Circular (Y) Athletes Pencak Silat (ρyx3) = 0.143 and the value of significance (sig) = 0.03 which is less than the probability (α) = 0.05. Turns track direct influence on the concentration of the circular kick Shield Pencak Silat Athletes Semen Padang is proven and acceptable means. 4) In the calculation results of path analysis, it was found that there is an indirect influence Southwestern Explosive Muscle Limb (X1) to kick Circular (Y) through concentration (X3) Athletes Pencak Silat Shield Semen Padang (ρyx31) 0.165 so that Ho refused and Ha is received, where there is the indirect effect limb muscle Power Burst to kick Coiling through Pencak Silat Athletes concentration Shield Semen Padang. Based on previous findings that directly influence Limb Muscle Power Burst to kick Coiling obtained for 0,363 or 12.96%, while the

influence of the motion of the kick Circular concentration is equal to 0.143 or 2.04%. This means that if it is integrated these two variables, the effect obtained is quite signifikan.Dapat interpreted Limb Muscle Power Burst through concentration gives a greater influence on the circular kick in Pencak Silat Athletes Shield Semen Padang. 5) In the calculation results of path analysis, it was found that there are significant indirect flexibility Waist (X2) to kick Circular (Y) through concentration (X3), meaning that there is the indirect effect flexibility Waist to kick Coiling through concentration Athletes Pencak Silat Shield Semen Padang ,

When all three components are owned by the athlete in relation to the interpretation of martial arts will produce a good kick Circular. From the research that has been done on the variable X1 X2 and X3 to Y obtained from the product of the path coefficient value pyx21 = 0,363 with t = 2.198 pyx32 = 0.356 with t = 2.112 and pyx3 = 0.143 with t = 1.850, compared with ttabel (1- 0.05) (32-1) = 1.610 (at α = 0.05). Because t = 2.198, 2.112 and 1.850> table = 1.610 then Ho is rejected, shall mean a significant path coefficients, so in this case H0 Ha accepted and rejected, which means a significant path coefficient anlisis. Thus, the leg muscle explosive power, flexibility and concentration Waist simultaneous motion effect to kick Circular.

IV. CONCLUSION

Based on the results of hypothesis testing and discussion, we concluded as follows:

1. Explosive Muscle Power Limb direct and significant effect on the kick Coilingamounting to 12.96%. This means that the stronger a martial arts athlete, the better kick Circular optimally.
2. Waist flexibility and significant direct effect on the kick Coiling amounting to 12.67%. This means that if a good athlete Motion Waist flexibility in movement it will increase the skills of athletes in a circular kick.
3. The concentration of influence directly and significantly to kick Coiling amounted to 2.04%. This means that if the concentration of good athletes in the motion it will increase the skills of athletes in a circular kick.
4. Explosive power leg muscle indirect effect of the circular kick through Concentrationamounting to 14.94%. Explosive power means the better the muscle, it will be able to increase the concentration in performing circular kick.
5. flexibility Waist indirect effect of the circular kick through Concentrationamounting to 15.44%. This means that if the concentration of athletes both in the process of movement. It will be able to increase the flexibility of doing kick Waist Circular.
6. Explosive power leg muscle, Flexibility and concentration Waist influence simultaneously to the circular kick by 27.67%. That is when the leg muscle explosive power, flexibility and concentration Waist good athletes it will provide a simultaneous effect on Kick Coiling.

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