



THE RELATIONSHIP OF BALANCE AND LEG MUSCLE STRENGTH WITH THE ABILITY OF STRAIGHT KICKS IN PENCAK SILAT ATHLETES FOSTERED BY DISPORA ACEH BESAR IN 2020

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Abstract

Pencak silat is a sport that has long been competed in the national and international arena. The problems in this research are as follows: How is the relationship between balance and leg muscle strength with the ability of straight kicks to the big Aceh Dispora-assisted Pencak silat athletes. The purpose of this study was to determine how much the relationship between balance and leg muscle strength and the ability of straight kicks in the Pencak silat athletes assisted by the Aceh Besar Dispora. This study uses a quantitative approach with the type of correlation research method. The objective of this research is to determine whether there is a relationship between the two or three variables studied. As for the population in this study, all male athletes of the Pencak Silat Assisted by Dispora Aceh Besar, totaling 7 people. Based on the results of the research on the balance of the Pencak Silat athletes assisted by the Aceh Dispora with an average balance of 45 and a standard deviation of 9.4. While the results of leg muscle strength are 208 on average and the standard deviation of leg muscle strength is 46.84. From the calculation of the coefficient of determination of the balance contribution, the leg muscle strength was 2.161 in the very strong category. From the results of the percentage of research results Balance to the Ability of Straight Kicks 0.29%, while the results of leg muscle strength are 208 on average and the standard deviation of leg muscle strength is 46.84. From the calculation of the coefficient of determination of the balance contribution, the leg muscle strength is 2.161 in the very strong category. From the results of the percentage of research results Balance to the Ability of Straight Kicks 0.29%.

Keywords: Balance, Leg Muscle Strength, Straight Kicks, Pencak Silat Athletes

A. Introduction

Pencak silat is a sport that has long been competed in the national and international arena, pencak silat is also a martial art which is a sport in Indonesia which often donates gold to Indonesia. This can be seen from the results of the Asian Games 2008 and then secured by the Olahraga branch. This traditional martial art won the overall champion at the 2018 Asian Games. By bringing 14 gold medals, the name of pencak silat is increasingly recognized by the world. A year later, in 2019, Indonesia managed to become the overall champion in the Belgium Open, and won 8 gold medals (Yulio Pratama & Trilaksana, 2018). To become a professional pencak silat athlete who can compete in the national arena, one must master the basic techniques of pencak silat skills. In addition, a pencak silat athlete must have good physical condition, including strength, endurance, agility, power and flexibility (Kuswanto, 2016).

In the sport, pencak silat has basic techniques or martial arts skills of Pencak Silat, (Kuswanto, 2016) which according to (Agung Nugroho, 2007) said that, the skills of Pencak Silat consist of: 1) stance; 2) attitude; 3) defense or block; 4) avoidance or shirk; 5) attacks (attacks with hands and attacks with legs or feet in the form of kicks, sweeps and grunts); and 6) catch. A pencak silat athlete must master all the basic techniques of pencak silat. Between the basic techniques of pencak silat kick technique is a powerful move in an effort to get points or wins over opponents. (Kuswanto, 2016)

According to (Agung Nugroho, 2007), Kick techniques are divided into several types, including: straight kicks, stab kicks, straight kicks, long kicks, kajul kicks, T kicks, celorong kicks, back kicks, horse kicks, spur kicks, sickle kicks, propeller kicks, down kicks, and kicks. However, not all kicks are used in the match. (Kuswanto, 2016) The types of kicks in pencak silat are divided into: According to Agung Nugroho, (2007) The types of kicks that are often taken in the Pencak silat competition, the competition category consists of: (a) front kick or straight kick, (b) sickle kick, (c) side kick or T kick. In getting the score on the match. In this study, the researcher tried to study the straight kick, this is because based on the observer that was carried out on athletes in Aceh Besar Dispora, there were still many athletes who were not right in kicking straight so that when they played matches they still often missed points from the opposing party, here the researcher tried to assess whether There is an inaccurate link between the straight kicks of the big Dispora Ache athletes with the component elements of their physical balance.

B. Method

In this study, the author conducted the research using quantitative approach with a type of collaboration method, which had the aim of knowing the contribution of the physical balance components of the Aceh Besar Dispora-assisted Pencak silat athletes on the ability to master the basic techniques of kicks in pecak silat. Technique Determination of the sample in this study using purposive sampling technique with the target research subjects in this study were the athletes of Pencak silat Binaan Dispora Aceh Besar totaling 7 people.

Table 1. Population and research samples in the Dispora Aceh Education and Sports Development Board in 2020.

No	Sample name	Gender		Age	Weight
		Women	Male		
1	Fahrul Aulia		√	15 years	45 kg
2	Approval		√	17 years	48 kg
3	Dawn			15 years	52 kg
4	great		√	17 years	56 kg
5	Riski Affanda		√	17 years	60 kg
6	Muhibbus		√	17 years	64 kg
7	Liwau lHamdi		√	17 years	67 kg

Source: Management of IPSI Branch of Dispora Aceh Besar 2020

Data Collection Techniques

This research process will be carried out by conducting tests and measuring the level of control of balance and tests of straight kick ability on athletes assisted by Dispora Aceh Besar. The test instrument used in this study used a standing balance test on one leg (Stork Satand), (Lahtinen et al., 2007). And for the measurement of leg muscle strength using the Leg Dynamometer test (Sugiyono, 2013).

Carrying out a Stork Stand Balance Test (Standing on One Leg)

The measurement of the balance test uses a tool in the form of a stopwatch. There are also measures for measuring the balance test as follows:

1. The testion stands on one dominant leg, the other leg is placed beside the knee, the hand is at the waist.

2. On the signal "yes", the testi raises the heel off the floor (tiptoe) and maintains this posture for as long as possible without any movement or placing the heel touching the floor.
3. When lifting the heels and maintaining them, the hands should not come away from the waist.
4. Performed three repetitions.
5. The longest time in maintaining a balanced position is the time used to assess testicular balance.
6. Time is recorded in seconds, starting from the moment the testi raises the heel until it begins to lose balance.

Table 2. Balance Test Norms

No.	Male	Category
1	51- and above	Very well
2	37 – 50	Good
3	15 – 36	Moderate
4	5 – 13	Less
5	0 – 4	Too little

Source: Jhonson & Nelson (2000: 89)

Straight Kick Ability Measurement Test

Participants Prepare with a stance to make a straight kick, and the participant stands behind the sandsack, with their feet on the male 60 cm and female 50 cm, with the sandsack/target height of 75 cm for the girl, and 100 cm for the male. When the committee gives the signal "yes", the participant kicks as fast as possible for 10 seconds. Likewise with athletes who (left-handed) use the left foot. The execution is done three times and the fastest kicking time can be taken.

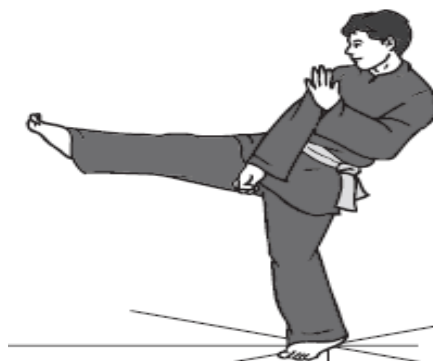


Figure 5. Straight kick ability test

Table 3. Table Norms of Son's Straight Kick Ability Test

Category	Score Son	Time
Very well	> 25 times	10 Seconds
Good	20-24 times	
Enough / moderate	17-19 times	
Less	15-16 times	
Very Less	<14 times	

Source: Lubis, J (2003: 99)

The data analysis process of the results of this research will be processed using the correlation formula.

C. Finding and Discussion

Balance Test Results

This study conducted a test Balance with a matter of seconds against 7 athletes of the Aceh Besar Dispora PencakSilat, as for the test results, can be seen in the following table:

Table 4.1 Balance Test Results

No.	Athlete Name	Second	Category
1	Liwaul Hamdi	46	Good
2	Fahru IAulia	48	Good
3	Muhibbusshabri	43	Good
4	Zaral Fajar	40	Good
5	Restu Ramadhan	30	Moderate
6	Rizky Affandi	61	Good
7	IbnAgung	48	Good
total		316	
Average		45	Good

From the results of the test for the balance of the Aceh Besar Dispora Education and Youth Training athletes, it is known that the balance of the Aceh Besar Dispora and PencakSilat athletes is 45 in the Good category.

Straight Kick Test Results

This study conducted a test A straight kick with a time of 10 seconds against 7 athletes, PencakSilat, Development, Dispora, Aceh Besar, the test results can be seen in the following table:

Table 4.2 Results of the Straight Kick Test

No.	Athlete Name	10 Seconds	Category
1	Liwaul Hamdi	21	Good
2	Fahrul Aulia	25	Very well
3	Muhibbusshabri	21	Good
4	Zaral Fajar	21	Good
5	Restu Ramadhan	24	Good
6	Rizky Affandi	22	Good
7	Ibnu Agung	22	Good
Total		156	
Average		22	Good

From the results of the research in the table above, it can be seen that the total number of scores on the straight kick test carried out by the Pencak Silat athletes assisted by the Aceh Besar Dispora is 22 times straight kicks.

1. Finding

Calculation of the correlation between balance (X1) ability to kick straight (Y)

$$r_{xy} = \frac{N \sum X_1 Y - (\sum X_1)(\sum Y)}{\sqrt{\{N \cdot \sum X_1^2 - (\sum X_1)^2\} \{N \cdot \sum Y^2 - (\sum Y)^2\}}}$$

$$r_{xy} = \frac{7(7027) - (316)(156)}{\sqrt{\{7 \cdot 14794 - (316)^2\} \{7 \cdot 3492 - (156)^2\}}}$$

$$r_{xy} = \frac{49189 - 49296}{\sqrt{\{103558 - 99856\} \{24444 - 24336\}}}$$

$$r_{xy} = \frac{107}{\sqrt{\{3702\} \{108\}}}$$

$$r_{xy} = \frac{107}{\sqrt{399816}}$$

$$r_{xy} = \frac{107}{632}$$

$$r_{xy} = 0.169$$

Based on the results of the data analysis above, it is known that the X relationship₁ and Y is 0.169 in the very low category. Furthermore, the researcher calculated the coefficient of determination to determine the contribution of balance to the ability of

straight kicks in Pencak Silat athletes assisted by DisporaAceh Besar. Maka $KP = r^2 \times 100\% = 0.1692 \times 100\% = 0.029$. This shows that Balance with Straight Kick Ability giving a relationship to the Pencak Silat Athletes Guided by Dispora Aceh Besar by 0.29% and the remaining 99.71% influenced by other factors.

Table. 5. To see the relationship between X and Y variables

Coefficient Interval	Relationship Level
0.00- 0.199	Very low
0.20- 0.399	Low
0.40- 0.599	Moderate
0.60- 0.799	Strong
0.80- 1,000	Very strong

Source: In Sugiyono (2008: 226) The strong relationship between variables

Hypothesis test

Proving the hypothesis can be done by testing the t-count which is one way to prove the truth or position of a research hypothesis, if the t-count is greater than or equal to the t-table, then the formulated hypothesis is accepted as true, preferably if the t-count is smaller rather than t-table, the proposed hypothesis is rejected. The t-count test can be taken with the Sudjana formula (2005: 109) as follows:

$$\begin{aligned}
 t &= \frac{r\sqrt{n-2}}{\sqrt{1-r^2}} \\
 &= \frac{2,161\sqrt{7-2}}{\sqrt{1-(2,161)^2}} \\
 &= \frac{2,161 \times 2,236}{\sqrt{1-(4,670)}} \\
 &= \frac{4,832}{\sqrt{3,670}} \\
 &= \frac{4,832}{1,916} \\
 &= 2,522
 \end{aligned}$$

The results of the analysis above, obtained the t-count value of 2.522 while the t-table with 2-7 degrees of freedom ($dk = 5$) at the significance level $\alpha = 0.05$ is equal to 2.015. This means that the t-count value is greater than the t-table value. Thus it can be concluded that there is a significant relationship between balance and leg muscle strength with the ability to kick straight in the pencak silat athletes assisted by Dispora

Aceh Besar in 2020. The hypothesis that the authors put forward is: "There is a significant relationship between balance and leg muscle strength and ability. a straight kick at the pencak silat athletes assisted by the Aceh Besar Dispora in 2020".

2. Discussion

Balance is the ability to maintain a posture or body position in a stationary or moving state (Harsono, 2001: 223). Balance is the ability of a person to control the nerve organs of his muscles, as long as he makes rapid movements with a rapid change in the location of the weight point, both in a static state and in a dynamic state. In the sport of Pencak silat, elements of physical condition are needed in kicking.

Based on the results of the research above, it is known that the balance of the Aceh Dispora Aceh Pencak Silat athletes with an average balance of 45 and a standard deviation of balance obtained in the pencak silat athletes assisted by the Aceh Besara Dispora is 9.4 and the average straight kick ability of the Aceh Besar Dispora-assisted Pencak Silat athletes is 22 and the standard deviation of the straight kick ability of the Aceh Besar Dispora-assisted Pencak Silat athletes is 2.6 from the calculation of the coefficient of determination of the balance contribution to the ability of straight kicks in the Aceh Besar Dispora-assisted Pencak Silat athletes, it was obtained r^2 , 0.029 with the category of being less. Aceh Besar.

D. Conclusion

There is a positive relationship between Balance and Straight Kick Ability. With a correlation coefficient (r_{y1}) of 0.169. The level of closeness of the relationship with the medium category. The coefficient of determination ($r_{y1}^2 = (0.169)^2 = 0.029$) means that 0.29% variation in straight kick ability (Y) can be caused by balance (X1) while 99.71% variation in straight kick ability (Y) is caused by other factors.

Thus it can be concluded that a pencakilat athlete must have a good level of balance to be able to produce a straight kick during a match. This is based on the results of research that has been done that the athletes of the Aceh Besar Dispora Assisted Pencak silat still do not have a very good level of balance so that when they do straight kicks they are still not right on target so the kicks are not done perfectly. From the results of this research, it becomes input for the Aceh Dispora Assisted Pencakilat coach to be able to improve the balance of the athletes so that in the future the Biaan Dispora Aceh Besar pencak silat athletes can do straight kicks perfectly and well.

Bibliography

- Agung Nugroho. (2007). *the Basic Skills of Pencak Silat in the History of the Development of Go International Silat Pencak*. FIK UNY.
- Kuswanto, CW (2016). *Compilation of physical tests for adult pencak silat athletes in the competition category*. Sports Journal. <https://doi.org/10.21831/jk.v4i2.6423>
- Lahtinen, U., Rintala, P., & Malin, A. (2007). *Physical performance of individuals with intellectual disability: A 30-year follow-up*. *Adapted Physical Activity Quarterly*. <https://doi.org/10.1123/apaq.24.2.125>.
- Sugiyono. (2013). *Educational Research Methods with Quantitative Approaches, Qualitative, and R & D* Sugiyono. 2013. "Educational Research Methods with Quantitative Approaches, Qualitative, and R & D." *Educational Research Methods with Quantitative Approaches, Qualitative, and R & D*. <https://doi.org/10.1>. In *Educational Research Methods with Quantitative Approaches, Qualitative, and R & D*.
- Yulio Pratama, R., & Trilaksana, A. (2018). *Development of the Indonesian Pencak Silat Association (IPSI) 1948-1973*. Avatara.
- Lubis, Johansyah. (2004). *Practical Guide to Pencak Silat*. Jakarta: Rajawali.
- PB.IPSI. (2000). *Rules for the Sports Competition of Pencak Silat and Perwasitan*. Jakarta: Central KONI.