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## The effect of knee tuck jump training on the results of straight kicks on adolescent female pencak silat martial arts athletes

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### Abstract

In the research that has been done and get the results of knee tuck jump training given in improving straight kicks on female pencak silat athletes in Gorontalo. In this study using experimental research with the method of one group pre-test and post-test design. The research population was female pencak silat athletes, the technique used was total sampling which amounted to 15 female athletes in Gorontalo.

The research has proven with the results obtained the average value of the athlete's pre-test = 19.87 and at the Post-test = 39.93. So with the meaning that it is late to get an increase in the value of the athlete's vertical jump after getting training with the knee tuck jump type. There is a difference in the mean of the pre-test and post-test of-20.067. and Sig value. (2-tailed) of 0.000 < 0.05.

According to the results produced by this study, it can be concluded that there is a significant difference between the results of knee tuck jump training on the results of pre-test and post-test data on straight kicks for female pencak silat martial arts athletes in Gorontalo.

**Keywords:** Knee tuck jump, straight kick, pencak silat, female athlete

### Introduction

Ideally, pencak silat martial arts training requires good physical condition, especially in the components of endurance, power, agility, accuracy and precision. But specifically in martial arts pencak silat is the strength of the leg muscles in doing straight kicks for adolescent female athletes. According to Harsono (20012: 24) strength (power) is a combination of strength and speed with fast intensity and directs all on strength. The straight kick technique in pencak silat is done with the tip of the foot, with the foot raised parallel to point forward at the target by straightening the leg to the toe, a straight kick is carried out with the body position perpendicular forward towards the target. The straight kick technique in female youth pencak silat really requires physical condition with the strength component in the leg muscles to produce a strong and directed kick in a straight kick.

However, based on the observations of researchers in the field on young female pencak silat athletes competing in student-level matches in Gorontalo, they are still very weak and very lacking in straight kick strength. This is due to the lack of training components carried out by athletes on strength so that the straight kicks of female teenage athletes are still weak. In addition, it is still widely found that the form of training for athletes given by coaches only focuses on technical training, while the physical component, especially in increasing the strength of the leg muscles, is still not a special concern.

Based on the problems that have been expressed above, the research conducted is how to increase leg muscle strength in pencak silat athletes, especially for female teenage athletes in Gorontalo, to improve the results of straight kicks for female teenage athletes to be even better.

### Research Ethos

This study uses an experimental research design conducted for a total of 18 meetings, 1 meeting conducting an initial test (Pre Test) before the training treatment is given to find out

the initial results of leg muscle strength of female teenage athletes. While the training was carried out for 16 meetings, then after being given training, at the 18 meeting the female teenage athletes took the final test (Post Test) to see the results of the training.

### Research Subjects

This research in taking the sample is by using purposive sampling technique, which is from the total of all Gorontalo female teenage athletes who are members of the regional student training camp totaling 15 people. The test instrument to determine the results of knee tuck jump training is to use the vertical jump test measurement. The stages of doing the vertical jump test each athlete is given the opportunity twice to get the highest score in the jump.

### Data Analysis

This experimental research data analysis method uses a one group Pre-test-pos-test design with SPSS version Windows

**Table 1:** Paired sample statistics

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-test Vertical Jump	19.87	15	5.069	1.309
	Post-test Vertical Jump	39.93	15	5.612	1.449

According to the descriptive results in table 1, it has been obtained with the mean value of the athlete's Pre-test = 19.87 and in the Post-test = 39.93. This means that there is an increase in the vertical jump value of athletes after getting

23. Data analysis is carried out to accurately determine the difference in the results of one group with two tests at the beginning before treatment and at the end of the test after being given exercise treatment.

### Hepatitis Test Procedure

The research sample amounted to 15 female athletes, before being given training treatment for 16 meetings, at the first meeting all female athletes did the initial vertical jump test first. Then athletes are given the type of knee tuck jump training to produce leg muscle power in female pencak silat athletes in Gorontalo. The training dose given is the frequency of training 3 times a week, with repetitions of 7-10, repetitions of 5-10 sets, high training intensity and training intervals of 70-120 seconds. After the training treatment is given then the athlete conducts a final test to record the results.

### Results and Discussion

training with the knee tuck jump type. Thus it can be concluded that knee tuck jump training has an influence on the results of straight kicks on female pencak silat athletes in Gorontalo.

**Table 2:** Paired samples test

Paired Samples Test									
		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest - Posttest Vertical Jump	-20.067	3.936	1.016	-22.247	-17.887	-19.743	14	.000

According to the results obtained from the analysis in table.2, it can be seen that there is a difference in the mean of the pre-test and post-test of -20.067. And the Sig value. (2-tailed) of  $0.000 < 0.05$ . It can be concluded that there is a significant difference between the results of knee tuck jump training on the results of pre-test and post-test data.

### Conclusion

According to the results in the output table of the t test results, it produces a sig value = 0.000, meaning the value is smaller than  $< 0.05$ . Thus,  $H_0$  is rejected and  $H_a$  is accepted.

- $H_0$  = there is no difference in the vertical jump value of female pencak silat athletes before and after being given knee tuck jump training, declared rejected.
- $H_1$  = there is a difference in the vertical jump value of female pencak silat athletes before and after being given knee tuck jump training, declared accepted.

Thus it can be concluded that there is a significant effect of knee tuck jump training on the results of straight kicks on female pencak silat athletes in Gorontalo. The knee tuck jump is a type of plyometric exercise to increase muscle strength in athletes of all types of martial arts including pencak silat. The type of knee tuck jump exercise applied in this study is very effective in helping coaches to provide the same program to athletes in shaping muscle strength in order to produce

maximum straight kicks when athletes practice or in conducting a match, especially in the fight match number in pencak silat martial arts in Gorontalo.

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