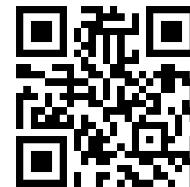


## The Effect of “Ankle Weight” and “Resistance Band” Training on Increasing Kick Speed of Nare Chagi Athletes Club Taekwondo Harapan Jaya Lampung



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**ABSTRACT:** This study aims to determine the increase in the speed of nare chagi kicks after being given treatment with ankle weight and resistance band weight training models. The research method used is a quasi-experimental method, with a pre-test and post-test research design, a sample of 30 athletes divided into 3 groups, namely two experimental groups and one control group with ordinal pairing technique. The instrument used is kicking nare chagi for 10 seconds. The results of this study: 1) there is a significant effect of ankle weight training on increasing nare chagi kick speed with data analysis  $t$  count  $24,683 > 1,812$  from  $t$  table 2) there is a significant effect of resistance band weight training on increasing nare chagi kick speed with data analysis  $t$   $20,886 > 1,812$  from  $t$  table 3) Ankle weight training has a greater effect than resistance training band and exercise without using weights on increasing the speed of the nare chagi kick with an average ankle weight exercise posttest greater than the resistance band exercise, namely  $28.2 > 25.6$ .

**KEYWORDS:** Ankle Weight, Resistance Band, Nare Chagi Kicks.

### INTRODUCTION

The success of taekwondo in achieving peak performance is largely determined by the quality of the practice. The quality of training is determined mainly by the circumstances and abilities of coaches and athletes, but both must have the ability, willingness and high commitment to achieve maximum results (Sukadiyanto, 2010: 5). An athlete takes a slow kick because there are several factors, namely: lack of kick training, lack of speed when kicking, lack of leg muscle training, inadequate facilities and infrastructure. For beginners who have not yet formed optimal strength and speed of contraction, as well as the technical ability to perform kicks and techniques for lifting the legs correctly, quickly and strongly, it is necessary to be given exercises related to kick speed. Due to the speed, power, balance of the kick greatly affects when sparring (kyorugi) or during a match. So the need for training to improve kick ability to support the strength that an athlete already has. Suharno (1983) the burden of training in the form of physical exercise to cause physical and mental stimulation of athletes in order to improve the quality of achievement. According to Djoko Pekik (2002: 51) the training load is grouped into 2, namely the outer load and the inner load.

According to Sukadiyanto (2011: 116) speed is the ability of a muscle or group of muscles to respond to stimuli as quickly as possible. Speed as a result of the combination of the length of the leg swing and the number of steps. The movement of the length of the swing and the number of steps is a series of synchronous and complex movements of the neuromuscular system. Increasing the length of the swing and the number of steps will increase the speed of movement. For this reason, in discussing the element of speed, it is always related to reaction time, frequency of motion per unit time and speed of traveling a certain distance.

Taekwondo is a martial art originating from Korea, is a martial art that uses hand and foot techniques to attack and defend. Taekwondo can be learned by anyone regardless of gender, age and social status. Currently taekwondo is very popular both at home and abroad. Taekwondo can also be called a popular sport or in other words taekwondo is a developing sport. Taekwondo was competed in 1997. Taekwondo consists of three words, namely tae which means foot/destroying with a kick technique, kwon means hand/hitting and defending oneself with hand techniques, and do which means art/how to discipline oneself (V. Yoyok Suryadi, 2002: 15). Taekwondo can also be called the art of hand-to-hand combat, because hand-to-hand combat is the basis of a martial art that builds strength by training the hands and feet to unite with the body so that they can move freely and freely, so that they can be used when facing critical situations or can be used every day. moment. The dominant martial art of taekwondo uses the feet to attack and defend, so taekwondo is a martial art that dances with the feet.

Speed training programs are now many and varied, but there are no exercises to increase the speed of taekwondo athletes that can be applied to the pre-competition periodization. So that many taekwondo athletes do not get maximum results in speed training. The taekwondo coach in Bandar Lampung still needs a speed training model, especially the Nare Chagi kick.

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## METHODS

This research was conducted at the Lampung Governor's Field. Researchers took samples of the Taekwondo Club Harapan Jaya athletes, totaling 30 athletes as an experimental class. The study was conducted for 4 weeks with 12 meetings and was conducted 3 times a week. The research method used is based on considerations of the nature of the research, namely the experimental method. According to Arikunto (2014: 124) describes in the research design experiment. Observations were made twice, namely before the experiment and after the experiment. The experimental observation before is called the pre-test, and the observation after the experiment is called the post-test. In this experimental method, pre-test and post-test designs are used. The research design used in this study was a pre-test-post-test design.

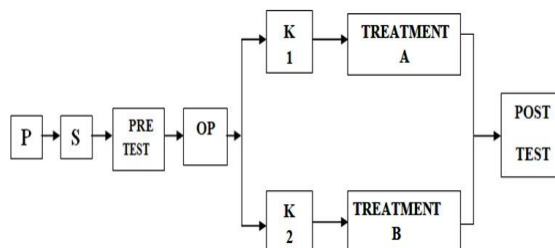


Figure 1. Research Design Source: Sugiyono (2015: 82)

The data analyzed is data from the results of the initial test (pretest) and final test (posttest). Calculating the results of the initial test (pretest) and the final test (posttest) with the t-test data analysis technique

## RESULT AND DISCUSSION

### 1. Data Description

Table 1. Descriptive Statistics of Preliminary Test

Statistic	Ankle Weight	Resistance Band	Control Group
N	10	10	10
Average	20.4	19	22
Std. Deviation	2.33	2.86	4.73
Sum	204	190	220

From the data above, the average value in the exercise group using ankle weights is 20.4 and the training group uses a resistance band load of 19 while the control group is 22 then the standard deviation value of ankle weight training is 2.33, the resistance band training group is 2.33 2.86 and the control group of 4.73. Then the sum/sigma value for the weight training group is 204, the resistance band weight training group is 190 and the control group is 220.

Table 2. Descriptive Final Test Statistics

Statistic	Ankle Weight	Resistance Band	Control Group
N	10	10	10
Average	28.2	25.6	23.6
Std. Deviation	2.33	3.32	5.12
Sum	282	256	236

From the data above, the average value of the ankle weight training group is 28.2, the resistance band weight training group is 25.6 and the control group is 23.6. Then the standard deviation value for the ankle weight training group is 2.33 and the resistance band weight training group is 3.32 and the control group is 5.12 then the sum/sigma value for the ankle weight training group is 282 and the resistance band weight training group is 256 and the control group is 236.

### 2. Prerequisite Test Results

#### a. Normality Test

The purpose of the normality test is to find out whether the distribution that occurs or not from normal distribution. The step before testing the hypothesis is to test the data analysis requirements with the normality test using the Lilliefors test (Sudjana, 2005: 466). The results of the normality test are as follows:

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**Table 3. Normality Test**

Variable	Lcount		Ltable	Information
Ankle Weight	0.248	<	0.337	Normal
Resistance Band	0.136	<	0.381	Normal
Control Group	0.092	<	0.300	Normal

From the table above, it shows that the significance value of Ltable is smaller than Lcount, so the data is normally distributed.

### b. Homogeneity Test

The homogeneity test was carried out to obtain information whether the two sample groups had homogeneous variance or not. The results of the homogeneity calculation are presented in the following table:

**Table 4. Homogeneity Test**

Number	Variable	Fcount		Ftable	Conclusion
1	Ankle Weight	1.536	<	3.217	Homogeny
2	Resistance Band	1.346	<	3.217	Homogeny

Based on the table above, it is known that the calculated F value is smaller than the table F value, so the writer can conclude that the data is homogeneous or the same.

### c. Hypothesis testing

The first hypothesis test is "There is an effect of ankle weight training on the kick speed of Nare Chagi Athletes of the Taekwondo Club Harapan Jaya Lampung". To clarify the influence between the independent variable and the dependent variable, an influence test was carried out which can be seen in the following table;

**Table 5. Testing the Effect of Ankle Weight and Resistance Band Exercises on Increasing Nare Chagi Kick Speed**

Ankle Weight	Control Group	Difference
24.683	5.063	19.620

From the table above, it can be concluded that the Ankle Weight exercise has a greater effect than the Resistance Band exercise on the kick speed of the Nare Chagi Athletes of the Taekwondo Club Harapan Jaya Lampung. With the results of the t-test analysis, the results from the Ankle Weight exercise were 24,683 and the results from the Resistance Band exercise were 20,886 with the difference between the Ankle Weight and Resistance Band exercises being 5,063. Ankle Weight training has a greater influence, this can also be seen from the average posttest Ankle Weight exercise is greater than Resistance Band training, which is > 28 kicks.

**Table 6. Testing the Effect of Ankle Weight Exercise and Control Group on Increasing Nare Chagi Kick Speed**

Resistance Band	Control Group	Difference
20.886	5.063	15.823

From the table above, it can be concluded that the Ankle Weight exercise has a greater effect than the Resistance Band exercise on the kick speed of the Nare Chagi Athletes of the Taekwondo Club Harapan Jaya Lampung. With the results of the t test analysis, the results from the Ankle Weight exercise were 24,683 and the results from the control group were 5,063 with the difference between the Ankle Weight exercise and the control group was 19,620. Ankle Weight exercise has a greater effect, this can also be seen from the average posttest Ankle Weight exercise is greater than the control group, which is > 28 kicks

**Table 7. Testing the Effect of Resistance Band Exercise and Control Group on Increasing Nare Chagi Kick Speed**

Ankle Weight	Resistance Band	Difference
24.683	20.886	3.797

From the table above, it can be concluded that the Resistance Band exercise has a greater effect than the control group on the kick speed of the Nare Chagi Athletes of the Taekwondo Club Harapan Jaya Lampung. With the results of the t test analysis, the results from the Resistance Band exercise were 20,886 and the results from the control group exercise were 5,063 with the difference between the Resistance Band exercise and the control group was 15,823. Resistance Band exercise has a greater effect, this can also be seen from the average posttest Resistance Band exercise is greater than the control group exercise, which is >25 kicks.

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### 3. DISCUSSION

Speed training in taekwondo is very important to get a good kick quality. Speed training with the taekwondo kick technique approach is still not widely applied to train athletes to get the best performance when competing. Footweights are loading devices used on athlete's feet with a load that can be adjusted according to the athlete's needs. Taekwondo exercises using leg weights are not carried out when the athlete kicks, but are carried out during exercise but are used when stretching both statically and dynamically to avoid muscle injury to athletes during exercise. Like when jogging, jumping, shuttle run. The following is an example of leg weights that will be used during exercise.

In accordance with Maulana (2017)'s statement which states that weight training is a systematic process of using loads where the load is only used as a tool to increase muscle strength in order to achieve certain goals, such as improving physical condition, health, strength, speed, achievement in a branch. Sport. The form of rubber weight training in question is to give rubber weights to the feet and tie them to the ankles, then the athlete performs a nare chagi kick using rubber weights mounted on both legs. The rubber used is strong, elastic and not too short so that when used it does not injure the joints of the athlete's knee.

On the other hand, practicing using rubber weights on the feet can stimulate the motivation and reaction of athletes in taking kicks quickly, because the elasticity of the rubber is a burden for athletes when kicking, the result is that these loads make athletes enthusiastic in doing nare chagi kicks quickly and easily. Optimal for resisting this load.

According to Sukadiyanto (2011: 116) speed is the ability of a muscle or group of muscles to respond to stimuli as quickly as possible. Speed as a result of the combination of the length of the leg swing and the number of steps. The movement of the leg swing length and the number of steps is a synchronous and complex series of movements of the neuromuscular system. Increasing the length of the swing and the number of steps will increase the speed of movement. For this reason, in discussing the element of speed, it is always related to reaction time, frequency of motion per unit time and speed of traveling a certain distance. That is, so that the body's ability to cover a certain distance with a certain time, as well as the frequency of the running steps.

In general, speed implies a person's ability to perform a motion or a series of movements as quickly as possible in response to a stimulus. Speed in taekwondo kyoruki can be defined as the ability of a taekwondo athlete to attack, counter, dodge and parry as quickly as possible with the right timing and accuracy. The speed of the kyoruki athlete is fundamental, because in the kyoruki match the athlete must get as many points as possible, one of which is by kicking the opponent as quickly as possible and then landing on the face, neck, body, stomach and other body parts of the opponent, also make sure to kick and get more points and faster than your opponent.

### CONCLUSION

Based on the results of data analysis, hypothesis testing and discussions that have been stated in the previous chapter, the conclusions and suggestions in this study are as follows:

1. There is a significant effect of ankle weight training on the kick speed of Nare Chagi Athletes Taekwondo Club Harapan Jaya Lampung, with an average pretest of 20.4 increasing to 28.2 in the posttest.
2. There is a significant effect of resistance band training on the kick speed of Nare Chagi Athletes Taekwondo Club Harapan Jaya Lampung, with an average pretest of 19 increasing to 25.6 in the posttest.
3. Ankle weight training has a greater effect than resistance band weight training and exercises without using weights on the kick speed of Nare Chagi Athletes at the Taekwondo Club Harapan Jaya Lampung, with an average post-test. Ankle weight training is greater than resistance band training, which is  $28,2 > 25,6$ .

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