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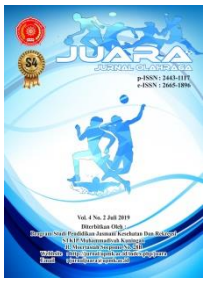

The Effect of Squat Training on Long Jump Ability

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Abstract

The purpose of this study was to determine the effect of squat training on long jump abilities. The research method used was one group pre-test and post-test. This study consisted of 20 students of class XI Computer Network Engineering who were taken randomly. Research results in peer squat exercise, which affects students' long jump abilities, have been studied before. Still, the difference with this study is that the method used is peer squat exercise, which is done in pairs to provide a new atmosphere and make students not feel bored. This study concludes that peer squat exercise, which is done in pairs, positively affects the long jump ability in athletic sports.

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INTRODUCTION

Sport is an educational way to get attention. Our bodies can be trained by exercising, and the organism functions properly (Ruswan, 2009). In this sport, athletics consists of running, jumping, and throwing, which is often abbreviated as 3L. Of the three forms of movement are the basis of all sports. In essence, Athletics requires leg muscle strength. As in the long jump number where the leg muscles are essential to the success of the jump. The leg muscles' strength is significant for the success of the long jump in the long jump number. Valid indicators of functional performance include leg muscle strength (Ong et al., 2014). Leg muscle strength is the power generated by muscles to drive any physical activity or athletic sports technique. The legs are the primary basis in athletic sports. The legs' incredible power gives an effective influence on the appearance or the ability to explore the muscles when

starting, running, or to do jump and throw numbers. The performance of most individual or team sports depends on a person's ability to generate strength quickly (MArkovic et al., 2004). Sports coaching is a process of training through body movements in physical activity, games, or sports that are carried out for specific purposes (Indrayana, 2017). Thus the program in squat training is very influential in athletic sports, exceptionally long jump.

The current curriculum taught at the school level is made by considering, among others: child development, facilities and infrastructure, and the application provided by the teacher. The physical education learning process at the SMK Almamater class is based on observation. Only a tiny proportion of them can do long jumps well and have long jump results. One of the obstacles is that students still do not understand how to jump far to produce a maximum jump which is accompanied by a lack of explosive power, especially in the leg muscles, due to the lack of exercise in leg muscle strength, especially muscle strength training for teenagers according to their growth and development. This is in line with what was said by (Chung et al., 2013) that the lower muscle strength is enlarged at 12 years of age and further expanded at 17-18 years of age.

Although this TKJ class XI student is not an athlete, in the sense that he was not previously trained but according to (Morriss et al., 2001) that it would be possible to show a significant improvement, even though muscle adaptation would not be entirely in this time scale.

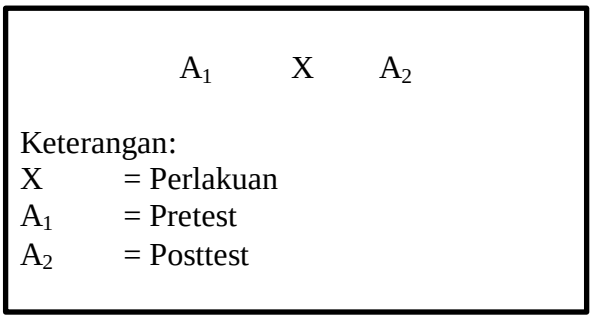
When testing children's running and jumping abilities, a good program is needed (Lmuzaini & Leck, 2008) so that this study using squat training on long jump abilities, which begins by explaining leg muscle strength training then continues by explaining good long jump techniques. And right. Exercise leg muscles in the long jump are done with a friend squat exercise. This training aims to improve the long jump skills of class XI TKJ students of SMK Almamater Telaga. Friend squats are paired exercises that aim to work out the leg muscles. There are many types of muscle strength training, but using peer squat exercises to provide a new atmosphere and students not to feel bored in this study.

Research related to leg muscles has been done before, although not too much like the results of thesis research (Untung, 2015) that there is a relationship between leg muscle strength where squat training is also included in leg muscle strength which can affect long jump abilities. This is supported by the research results from (Negara et al., 2014) that plyometric training on long jumps is an effect, where plyometrics is also leg muscle strength training. However, in a different study from the previous one, the exercises used were in the form of squat exercises, which were done in pairs that could positively affect jumping ability.

METHOD

The method used in this study is research *one group test* and *post-test* design with the following procedure. The population in this study were students of SMK Almamater Telaga. This study consisted of 20 students of class XI Computer Network Engineering who were taken randomly. This study conducted two tests, namely pre-test before being given *the treatment* a friend's squat exercise and a *post-test*, namely after being given *the treatment* a friend's squat exercise.

Figure 1. The One Group Pretest-Posttest (Ramadan & Juniarti, 2020)



The result is assumed that it is the impact of the given squat training treatment, which is taken from the long jump results. The pre-test and post-test results are expected to be better because there is a comparison between before and after being given *treatment*.

The long jump results in this study were the students did a long jump in the tub, and the distance was measured in meters. The results of students' jumps are taken and processed as data. The variables in this study include muscle strength training, namely squats performed in pairs and alternately carried out for four weeks consisting of 3 times a week, and the following variable is the long jump performed by students by doing prefix, support, or repulsion, hovering, and landed.

In the pre-test and post-test, each student is allowed to do the long jump twice, after which the distance between the heel when landing and the pedestal is measured. That longest distance is taken as a result. If the student falls backward while landing, the body part closest to the pedestal will be counted as a result of the long jump (Lmuzaini & Leck, 2008)

FINDINGS AND DISCUSSION

Findings

Data obtained from the pre-test or pre-test, namely the results of the students' long jump before being given treatment in the form of squat exercises carried out in pairs. The pre-test data shows that the farthest jump distance is 4.74 m, while the closest jump distance is 2.11 m. This data has been analyzed and obtained an average value of 3.39, a median value of 3.49, a mode value of 3.21, and a standard deviation value of 0.66.

The data obtained from the final test results or post-test results, namely the results of the students' long jump after being given

treatment in the form of squat exercises, which were carried out in pairs. The post-test results show that the farthest jump distance is 5.25 m, and the closest jump is 3.47 m. After analyzing the data, the average value was 4.52. The median value is 4.62, the mode value is 4.61, and the standard deviation is 0.53

Based on the pre-test and final test data results, it can be seen that the process of peer-to-peer squat training, which is done in pairs, affects the long jump ability of class XI TKJ students. This is evidenced by the increase as far as 1.36 m from the lowest jump results before being given treatment and after being given treatment, and the results of the farthest jump increasing as far as 0.51m from the results before and after treatment. The data obtained shows that class XI TKJ students get an increase from pre-test to post-test on long jump abilities, so it can be concluded that peer-to-peer squat training has a positive effect on long jump abilities.

Discussion

Physical exercise can be defined as an activity according to specific rules and methods that aim to improve various aspects of physical abilities such as endurance, strength, speed, skills, and so on (Ruswan, 2009). These aspects must be possessed to be able to do sports with good and right.

Endurance, strength, and speed have a relationship depending on the exercise program carried out; if one physical ability is more prominent, the others will adjust or participate simultaneously with the movements performed or the program being carried out. Physical exercise is often said to be strength training using weights, in simple terms, to apply force (Ruswan, 2009).

Exercise is a systematic process that is carried out repeatedly and continuously (Kresnapati, 2018). Exercises are carried out to increase muscle strength so that you can do the long jump as possible. Exercise steps taken at various points can be used to identify the advantages and disadvantages of a given training program (Ong et al., 2014)

If you want to jump as far as possible, you have to apply the most muscular strength you can when you start (Wu et al., 2003). Students take a square and run as fast as possible; then, the last three steps are used the optimal body position for landing. On the pedestal (Nolan et al., 2012), in the repulsion phase, the students did the repulsion as tightly as possible by supporting one foot on the pedestal and adjusting the body's position to float. In the floating phase, the students carried out hovering by pushing their feet as hard as possible forward towards a jump. When moving from the floating stage to the landing, the hands and feet movements are controlled to maintain body position so that they land efficiently (Take-off et al., 2010). In the last phase, namely landing, students land perfectly on the sand like a jump. Better performance provides increased initial impulses, but worse performers, stimulants decrease during the preparation phase (Wu et al., 2003)

The purpose of this study was to determine the effect of squat training on long

jump abilities. Doing the exercises must know the factors that can influence and play a role in achieving practice, especially in the long jump. Factors that greatly influence or play a role in increasing the long jump ability are the physical condition in strength. The study results (Gontarev et al., 2014) show a strong relationship between the long jump and strength. However, in this study, muscle strength training was carried out by treating partner squats in pairs. The results showed that the treatment given, namely peer squat training, affected the long jump ability. It can be seen that the results of the pre-test and post-test show that there is an increase in the long jump results.

CONCLUSION

The research conducted was an effect of leg muscle strength training in the form of paired exercises on long jump abilities. Researching the state of paired squat exercise that affects muscle strength on long jump abilities is a means for teachers to improve students' long jump abilities. Research in the form of peer squat exercise, which affects students' long jump abilities, has been studied before, but the difference with this study is that the method used is peer squat exercise which is done in pairs so that it provides a new atmosphere and makes students not feel bored.

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