



REVIEW

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The Effect of Strength Conditioning on the Playing Skills of Sepaktakraw Athletes Universitas Pahlawan Tuanku Tambusai

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ABSTRACT

ARTICLE INFO

The purpose of the study. The purpose of this study was to determine the extent of the effect of strength conditioning training on the playing skills of sepak takraw athletes at Pahlawan Tuanku Tambusai University.

Materials and methods. The method used is path analysis research method to see the direct influence between variable X on variable Y with a population and sample of 25 people. The data in this study are the results of strength and physical fitness conditioning tests which were analyzed using test requirements path analysis techniques.

Results. The results of the research that has been conducted on the strength and conditioning variables on the physical fitness level of the Sepak Takraw Athletes at the University of Pahlawan Tuanku Tambusai found a direct influence between strength and conditioning (X1) the playing skills of the Sepak Takraw Athletes at the University of Pahlawan Tuanku Tambusai of 0.721. This can be seen in the Coffesient Table which shows the value of sig. 0.000. It turns out that the value of sig. 0.000 is smaller than the probability value of 0.05 or a value of 0.05 > 0.000, so it can be concluded that strength and conditioning have a direct effect on the playing skills of Sepak Takraw Athletes at Pahlawan University Tuanku Tambusai.

Conclusions. The Conclusion From the test results show that physical strength is very influential on the skills of playing Sepak Takraw on the athletes of the Pahlawan University Tuanku Tambusai.

Keywords: *Takraw Athlete; Play skill; Strength Conditioning.*



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INTRODUCTION

Sport is an awareness in developing the potential of student resources by encouraging and facilitating learning activities. Learning is a very vital key term in any educational endeavor, so without learning it is impossible to have education. As a process, learning almost always gets a broad place in various disciplines related to educational efforts. Learning also plays an important role in maintaining a group of

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human beings (nations) in the midst of intense competition among other nations who have advanced because of learning. The meaning of learning itself is the process of effort made by individuals to obtain a new behavior change as a whole, as a result of the individual's own experience in interaction with his environment (Domene, 2013).

Physical fitness is closely related to human activities in doing work and moving. Physical fitness is needed to support a person's daily activities so that these activities are optimal. High physical fitness is a very essential capital in completing activities effectively and efficiently. One way to improve body fitness is through regular, measurable, programmed, systematic and always increasing exercise. The development of physical conditions through sports is the main foundation in improving physical fitness. Individuals who have good physical fitness will avoid the possibility of injury when carrying out physical activities or more strenuous sports. Lack of endurance, flexibility, muscle strength, speed, and agility are the main causes of injury. Physical fitness is something that is already popular in today's society (Monleón et al., 2015).

Regarding the definition of physical fitness, there are several experts who provide the following understanding: (Ronald, 2003) defines physical fitness as the ability of a person to carry out his duties easily and easily, without feeling excessively tired, and still having energy left or reserves to enjoy his spare time and enjoy his leisure time. for urgent needs. In other words, physical fitness is defined as a person's ability to cope with tasks perfectly even in difficult circumstances, on the other hand, people who lack physical fitness will not be able to do it. (Prastowo & T, 2014) states that physical fitness is the ability to do work or activities, enhance work power with or without experiencing significant or excessive fatigue. So it can be concluded that physical fitness is the body's ability to mobilize and adjust the function of the components of the body's organs within physiological limits to environmental conditions or physical work efficiently without significant fatigue.

Not fit one's body will affect the quality and quantity of one's body performance. This is characterized by the body being easily tired and the body's response to wanting to rest which results in sleepy eyes that affect the performance of one's body. Likewise with learning performance in learning, students who are not fit will feel tired in



following learning. this is because the body is not fit in carrying out learning which has implications for the low learning achievement of students.

The researcher's observations on students who attend sports clubs on the guava island are quite surprising. Sometimes students who take part in sports in the village of Pulau Jambu get good learning achievements and high average scores. On the other hand, students who excel in sports often fail in general learning material. So theoretically, fitness-related references to fitness become some of the problems in research.

As for theoretically, (Čillík & Willwéber, 2018) physical fitness is a physical aspect of overall fitness (total fitness) which gives a person the ability to lead a very productive life and can adapt to any appropriate physical load or stress. Someone who has good physical fitness can be interpreted as having enough ability to do his job efficiently without causing significant fatigue, so that he still has energy left to fill his spare time and other sudden tasks. Components of physical fitness related to health, consisting of heart and lung endurance, body composition, flexibility, muscle strength and endurance. While the components of physical fitness related to skills include: explosive power, speed, agility, coordination, speed, reaction and balance.

Based on some of the descriptions above, it can be concluded that strength conditioning can be interpreted as physical ability in the skill of playing sepak takraw.

MATERIALS AND METHODS

Study participants

The method used is path analysis research method to see the direct influence between variable X on variable Y with a population and sample of 25 people.

Study Organization

The type of research used is non-experimental research through a quantitative descriptive approach. Descriptive research is research conducted to describe certain symptoms, phenomena or events. Data collection is carried out to obtain information related to certain phenomena, conditions or variables and is not intended for hypothesis testing (Maksum, 2009). The method in this research is a path analysis



method with a causal relationship. A causal relationship is a relationship where one variable causes another variable (Maksum, 2009).

The path analysis model is used to analyze the pattern of relationships between variables with the aim of knowing the direct or indirect effect of a set of independent variables (exogenous) on the dependent variable (endogenous). The variables studied consisted of four variables consisting of exogenous (free) variables and one endogenous (bound) variable. Exogenous variable Strength conditioning (X) Endogenous variable physical fitness (Y).

Test and measurement procedures

The research method used in this research is a quantitative approach, survey method with measurement and test techniques. While the analysis technique uses a path analysis approach, namely research that will examine or analyze the relationship between research variables, and measure the direct and indirect effects of one variable on other variables..

RESULTS AND DISCUSSION

The results of this study were processed using statistical tests with path analysis techniques, it is necessary to test requirements analysis, so that the results can be used to draw conclusions. The results of the requirements test in question are the normality test and the linearity test.

Normality Test

Normality test results to see whether the data obtained from each research variable is normal or not, then a normality test is carried out using the Liliefors test. If the result of the highest L_{count} (L_0) value from the group of variables, the Normality Test. Which is examined is smaller than L_{table} (L_t) in the list, then the data is said to be normally distributed. Meanwhile, what is meant by L_{count} (L_0) is the difference between the largest absolute price between the raw data opportunities and the raw data proportions. For more details, the results of the normality calculation of the variables studied using the Liliefors test will be presented at a significance level of $\alpha = 0.05$.

Normality Test (X)



Based on the results of the Liliefors normality test calculation, the L_0 value is 0.1005. Where the critical value of L_0 in the Liliefors table for the sample size $(n) = 25$ with $\alpha = 0.05$, the value is 0.1319. When compared, the calculated L_0 value is smaller than the table L_0 , so it can be concluded that the X normality test is normally distributed.

Normality Test (Y)

Based on the results of the liliefors normality test calculation, the L_0 value is 0.1130. Where the critical value of L_0 in the liliefors table for the sample size $(n) = 25$ with $\alpha = 0.05$, the value is 0.12600. When compared, the calculated L_0 value is smaller than the table L_0 , so it can be concluded that the Y normality test is normally distributed.

Linearity Tests

The results of the regression linearity test analysis were carried out to test the relationship between variables, namely fulfilling the requirements that these variables must have a linear and regression relationship. For linearity test requirements, if $F_{\text{count}} < F_{\text{table}}$. Meanwhile, to meet the significance of the regression if $F_{\text{count}} > F_{\text{table}}$. The value of the correlation coefficient is a calculation number that states the level of strength of the relationship. The strength of the correlation has an acceptable level of significance if $t_{\text{count}} > t_{\text{table}}$.

Based on the results of the calculation of the regression linearity test, it was obtained that the $F_{\text{-fit}}$ was -7.221. Where the critical value of F table for sample size $(n) = 25$ with F table obtained a value of 17.260. When compared, F_{count} is smaller than F_{table} , so it can be concluded that the linearity test of this data is linear regression. And to test the significance of the regression with the provisions of $F_{\text{count}} > F_{\text{table}}$, the regression test is significant. So with the significant regression test of X against Y there is a t_{count} of 27.356 and F_{table} is 2.04, it can be concluded that there is a significant regression.

Hypothesis Tests

Test individually (X against Y) strength conditioning on the skills of playing sepak takraw.

Individual tests are shown by the Coeficients table, that the results of the path coefficient $p_{yx} = 0.000$



Table 1. Model Summary

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	,728 ^a	,725	,721	2,25777	,725	125,824	1	24	,000	1,095

a. Predictors: (Constant), Strength conditioning

b. Dependent Variable: The skills of playing sepak takraw

The research hypothesis to be tested is formulated in the form of a statistical hypothesis as follows:

$$H_a: p_{yx} > 0$$

$$H_0: p_{yx} = 0$$

Sentence form hypothesis

H_a : Strength and conditioning have an effect on the skills of playing sepak takraw on the athletes of Universitas Pahlawan Tuanku Tambusai.

H_0 : Strength and conditioning did not contribute to the skills of playing sepak takraw in the athletes of Universitas Pahlawan Tuanku Tambusai From the table above. Coefficients, obtained the value of sig. 0.000. It turns out that the value of sig. 0.000 is smaller than the probability value of 0.00 or a value of $0.05 > 0.000$, then H_a is accepted and H_0 is rejected, meaning that the path analysis coefficient is significant. So Strength and conditioning affect the skills of playing sepak takraw on the athletes of the Universitas Pahlawan Tuanku Tambusai.

DISCUSSION

Strength and conditioning is an element of physical condition in a certain movement activity as well as the main element in an effort to achieve learning achievement in students. According to Bompas in Syafrudin (2011) defines "Physical fitness as a product of two abilities, namely strength (strength) and speed (speed) to perform maximum force in a fast time". In line with that, James Tangkudung (2012) states that power is also called elastic strength, which is the type of strength that is needed where muscles can move quickly against a resistance and a combination of speed of contraction and speed of movement. Researchers concluded that Strength and conditioning is a combination of speed and strength in the legs, leg explosive power is very important to improve one's physical fitness.



Good physical fitness in carrying out security activities for the Security Guard, it is certain that the results of Strength and Conditioning affect the level of physical fitness of the Universitas Pahlawan Tuanku Tambusai.

From the results of research that has been carried out on the strength and conditioning variable on the level of physical fitness of the security guard at the University of Pahlawan Tuanku Tambusai, it was found that there is a direct effect of strength and conditioning (X1) on the level of physical fitness of the security guard at the University of Pahlawan Tuanku Tambusai of 0.721. This can be seen in the Coffesient Table which shows the value of sig. 0.000. It turns out that the value of sig. 0.000 is less than the probability value of 0.05 or a value of $0.05 > 0.000$, then the alternative hypothesis H_a is accepted and the null hypothesis H_0 is rejected. It can be interpreted that the path analysis coefficient between strength and conditioning (X1) on physical fitness (Y) is giving a very significant effect. So that it can be concluded that strength and conditioning have a direct effect on the level of physical fitness of the Security Guard of the Universitas Pahlawan Tuanku Tambusai. The test results show that physical strength greatly influences the physical fitness of the security guard at the Pahlawan Tuanku Tambusai University.

When viewed from the magnitude of the influence of physical fitness found a strong influence that is equal to 0.721 or 72.10% when tested individually. These findings were also found in several research journals (Shan, 2010) which states that, shows that arm muscle strength influences archery achievement, which means that it shows that arm muscle strength affects achievement in sports.

The magnitude of the influence of strength on physical fitness is also stated by (Batsila et al., 2014) that this study provides the clinician with a comprehensive profile of range of motion and muscle strength measurements in the pitching and nonpitching arms of professional.

According to (Humaid, 2017) Skill is a consistent degree of success in achieving a goal efficiently and effectively. In general, what is meant by skill is the ability to move with a certain level. The term skill is also defined as an act or task, and as an indicator of a level of proficiency. As an indicator of the level of proficiency, skills are defined as



competencies that are demonstrated by someone in carrying out a task related to the achievement of a goal. The higher a person's ability to achieve the expected goals, the more skilled that person is. According to (Raj, 2018) the achievement of a skill is influenced by many factors, namely: (1) teaching and learning process factors, (2) personal factors, and (3) situational (environmental) factors. These three factors are believed to have been the main determinants for achieving success in learning skills. Meanwhile, according to (Sahara et al., 2019), mastery of skills in each sport is based on mastery of basic skills. These basic skills are generally divided into three groups, namely (1) locomotor skills, (2) non-locomotor skills, and (3) manipulative skills.

According to (Maselena & Hasan, 2012) The game of sepak takraw is known to the Indonesian people in several areas in Indonesia such as Kalimantan, Sumatra and Sulawesi as Sepakraga, which is a game for children of the country where in playing sepakraga still using a ball made of rattan. In this game, each player shows a skill in ball control, players play rattan ball with all limbs except with hands such as feet, thighs, chest, shoulders, head etc. This game is very interesting because in this game to maintain how to keep the ball played for a long time without falling to the ground. The development of sepak takraw in Asian countries, especially Southeast Asia, has been familiar with the game using this rattan ball for a long time. It's possible that in each country the way to play and the name of the game are different.

According to (Aryanti et al., 2021), sepak takraw is a game that uses a ball made of rattan, played on a flat field measuring 13.40 m long and 6.10 m wide. In the middle it is bounded by a net as high as 1.55 m. In this game, the feet and all the limbs except the hands are used. The goal of each party is to return the ball in such a way that it can fall on the opponent's court or cause the opponent to make a foul or play wrong

To be able to play sepak takraw well, a person is required to have good abilities or skills. A very important and very necessary ability is the basic ability to play sepak takraw. According to (Hanif, 2015). Without mastering basic skills or basic techniques, the game of sepak takraw cannot be played properly. In order to practice mastery of the techniques and tactics of the sepak takraw game, you must be guided by easy to difficult movements. According to (Jufrianis et al., 2019) the sepak takraw technique



includes kicking, namely: Sepaksila, Sepakkuda, Sepak Badek, Sepakcungkil, heading (heading), thighs, mendada, tread, sepakmula (servicing), smash, and blocking. According to (Jufrianis et al., 2021) "the basic techniques of sepak takraw consist of: sepaksila, sepakkuda, sepakcungkil, treading, sepakbadek, heading, mendada, restraining, shoulder-to-shoulder". Meanwhile, The basic techniques of sepak takraw include: Sepaksila, Sepak Kuda, Sepak Cungkil, Foot Foot Kick, Kick Kick. According to (Jufrianis et al., 2018) to be able to play good sepak takraw, a person is required to have the ability or basic skills to play well.

CONCLUSION

The Conclusion From the test results show that physical strength is very influential on the skills of playing Sepak Takraw on the athletes of the Pahlawan University Tuanku Tambusai.

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APPENDIX

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