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The Contribution Of Arm Muscle Power And Reaction Speed To The Accuracy Of The Serve In The Tennis Game Of Aceh Tennis Club Gemilang Athletes Banda Aceh In 2020

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Abstract
Background*: Research entitled "Contribution of Arm Muscle Power and Reaction Speed to Service Accuracy in Aceh Tennis Club Athletes Court GemilangBanda Aceh in 2020".Court tennis is a type of sport played between two players or two couples. Each player uses a racket to hit a rubber ball. Serve is one of the basic techniques that players must acquire as the first step in doing a court tennis game. Precise and hard serve is a powerful weapon in earning points. To perform a hard serve, strong arm muscle power is needed, with the strong arm muscle power, the service stroke will succeed as expected. In servicing, not only hard arm muscle power is needed but it requires reaction speed and accuracy in servicing.*
Materials and Methods*: This study used a descriptive method with correlational analysis techniques. The population in this study was 8 athletes from Aceh Tennis Club Gemilang Banda Aceh. The sampling technique carried out is Purposive sampling. The data collection technique is carried out by: (1) arm muscle power test (medicine ball) (2) whole body reaction test (3) court tennis service accuracy test. Data analysis techniques are carried out using the formula of double correlation analysis.*
Results*: Based on the results of data analysis, the findings of this study can be stated as follows: there is a positive and significant relationship between arm muscle power and reaction speed to the accuracy of court tennis service (F=3.18), arm muscle power contributes 43.56%, and reaction speed 47.61% to the accuracy of the court tennis service of Aceh Tennis Club Gemilang Banda Aceh athletes in 2020.*
Keywords: *Arm Muscle Power, Reaction Speed, Tennis Courts*

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I. INTRODUCTION

Aceh Tennis Club Gemilang is a tennis club located in the city of Banda Aceh. The club has several athletes who have a regional and national perspective. Improving performance is impossible if the skills and components of his physical condition are not optimal. Good technique and physique will provide benefits for athletes when competing and the skills trained will provide maximum competitive performance to athletes. Many athletes have developed rapidly in the game of court tennis, the quality of technique and good physical quality are used as one of the efforts in displaying a good game in a match. Likewise with various punching techniques, the punching technique in the court tennis game also greatly influences to grab points. The technique of punching in tennis is as follows: service, forehand, drive, backhand, volley, lob, drop shot and smash (Magheti, 1990:32). The serve is the opening stroke of the game, this type of punch is very important for the athlete to be able to master the course of the game. But with the progress of this game, one realizes with a strong or weak serve he starts a point or a number even in difficult or urgent circumstances then this stroke becomes important (Katili, 1977:51). An effective serve is the key to victory, as it means having 50% of the numbers compared to defensive punches. If your serve is weak, your opponent will attack him and have a chance to score in every attack (Brown,2001:53).

Based on surveys in the field during the training process, serves can be done well by athletes, but in reality it is very different at the time of the game there are still many athletes who make mistakes when serving, such as inaccurate ball placement and the ball cannot pass through the net. To get good service and earn points,

of course, it is influenced by physical conditions, one of which is power. The power referred to in this study is arm muscle power. In performing service movements, strong arm muscles are needed, meaning the ability of the arms or arm muscles when swinging at serve time so that they can produce hard and directed blows. If a player serves with strong arm muscle power, it will result in a hard serve punch. In performing a good service and earning points, not only hard arm muscle power is needed but also requires reaction speed and accuracy in serving. Speed is a gesture that is done very quickly in a relatively short time. Reaction speed is the body's response to a given stimulus, as said by Sajoto (1995:10) who said "Reaction speed is the ability of the athlete's organism to answer an excitatory as quickly as possible in achieving the best possible result". So it can be concluded that the reaction speed is a movement that a person makes quickly to stimuli received by the human senses.

In the sport of court tennis requires maximum concentration and as soon as possible to respond to service strokes. A tennis athlete must also have a good reaction in serving, this is intended so that the athlete is able to respond with the fastest movement in a short time so that the serve stroke is directed appropriately until the opponent is difficult to return the ball. Based on the explanation above, it can be concluded that a very important factor for coaching basic techniques in playing court tennis in order to achieve maximum achievements, in the game of court tennis, each player must have different abilities and movements when competing where it requires arm muscle power, reaction speed to the accuracy of court tennis serves so that later they can play optimally. Based on the description above, the author is interested in conducting a study entitled "Contribution of Arm Muscle Power and Reaction Speed to Service Accuracy in Aceh Tennis Club Athletes Court Gemilang Banda Aceh in 2020"

II. RESEARCH METHODOLOGY

This study used a descriptive method with correlational analysis techniques. The population in this study was 10 people with Purposive Sampling technique, and the sample was ATCG Banda Aceh athletes who were 8 men of the male sex. The data collection technique was carried out with a field reduction test with several test items including: Arm muscle power test (medicine ball), reaction speed test (whole body reaction) and court tennis service accuracy test.

III. RESULTS AND DISCUSSIONS

Based on the results of the study and analysis of arm muscle power test data and reaction speed to the accuracy of court tennis serves consisting of three test items have been obtained results as seen in hypothesis testing with good attachment to one another without being based on coincidence. The results of hypothesis testing in the study were based on the results of the first hypothesis test between arm muscle power (X1) against the accuracy of court tennis serve (Y) based on calculations = 0.05 and n = 8, one-party test; dk = n – 2 = 8 – 2 = 6, so obtained ttabel = 1.94. It turns out that the count is greater than the ttabel, or 2.14 1.94, then Ho is rejected and Ha is accepted, this means that there is a significant relationship between the power of the arm muscles (X1) and the accuracy of the court tennis serve (Y). Testing of the second hypothesis between reaction speed (X2) to the accuracy of court tennis serve (Y) based on calculations, = 0.05 and n = 8, one-party test; dk = n – 2 = 8 – 2 = 6, so obtained ttabel = 1.94. It turns out that the count is greater than the ttabel, or 2.33 194, then Ho is rejected and Ha is accepted, meaning that there is a significant relationship between the reaction speed (X2) to the accuracy of the court tennis serve (Y). Testing of the third hypothesis based on the calculation results, = 0.05 and n = 8, one-sided test; dk = n – 2 = 8 – 2 - 1 = 5, so obtained ttabel = 2.01. It turns out that the fhitung is greater than the ftabel, or 3.18 2.01, then Ho is rejected and Ha is accepted, meaning that there is a significant relationship between arm muscle power (X1) and reaction speed (X2) to the accuracy of court tennis serve (Y).

IV. CONCLUSIONS

The results of hypothesis testing in the study were based on the results of the correlation test between X1 and X2 with Y obtained a double correlation efficiency of 0.75. With $\propto$ = 0.05 and n = 8, test one party; dk = n – 2 = 8 – 2 - 1 = 5, so obtained ttabel = 2.01. It turned out that the count was greater than the ftabel, or 3.18 $\geq$ 2.01, so Ho was rejected, meaning that there was a significant contribution between arm muscle power (X1) and reaction speed (X2) to the accuracy of court tennis serve (Y). The calculation above can be concluded that there is a significant contribution of arm muscle power (X1) and reaction speed (X2) to the accuracy of court tennis service (Y) in ATCG Banda Aceh athletes in 2020. In addition, it is also supported by techniques mastered by athletes, the better the techniques mastered by athletes, the more optimal the results obtained.

Based on the results of the study and conclusions, the following suggestions can be put forward:

a. In an effort to improve the accuracy of sevis tennis courts, it is necessary to pay attention to the power of arm muscles and reaction speed to support success in the sport of Court Tennis.

b. For other researchers, this research can be continued in a broader problem with a larger number of samples, so as to contribute thoughts to coaches, teachers and students to improve achievements in the sport of Tennis Courts.

c. For researchers, it can make input and enrich the science of research and in conducting the next research can be better.

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