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EFFECTIVENESS OF TRAINING PROGRAMS TO IMPROVE TENNIS SERVICE SKILLS

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Abstract

Serving in tennis is important, because apart from being the opener in a match, the serve can give points if it enters the opponent's area legally without being able to return it. This study has the main objective to see how far the results of the tennis skills training program for Odd Semester Penjaskesrek students at FKIP Halu Oleo University. This research is using experimental method. The population in this study were all Odd Semester Penjaskesrek students at the Halu Oleo University FKIP which opened 959 students. The sample in this study used purposive sampling which was taken with the condition that the students were active, male, and also actively participated in tennis courses so that 20 student samples were taken. The service stroke accuracy instrument in this study uses "Hewitt's Tennis Achievement Test" from AAHPER which has a certain validity and reliability value, the validity value is 0.93 while the reliability value is 0.94. This study looked at the difference between the initial test (pre-test) and the final test (post-test) with experimental people who were treated for 30 times of exercise. Based on the results of data processing, it was obtained that the average serviceability during the pre-test was 34 points, with a standard deviation of 0.2, while the average serviceability at the post-test was 42 points, with a standard deviation of 0.9 This study proves that there is a significant difference in service results between the pre-test and post-test after the exercise is given regularly.

Keywords: Training Programs; Tennis; Service

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INTRODUCTION

Court tennis is a sport that can be played between 2 players (single) and 2 pairs (double) (T et al. 2020; Torres-Luque et al. 2018). Each player uses a racket to hit the ball, the purpose of this game is to find points by hitting the ball in the direction specified in the rules, so that the opponent is unable to reach the ball and points occur (Soares and Harwood 2017). Tennis is a game that is favored by both men and women, even getting more places than other sports. The game of tennis



is a special exercise, because of its background and tradition (Anderson et al. 2021; Gerdin et al. 2020). Tennis can be played on various types of courts, namely: synthetic, clay, grass, and wood. Indoor tennis facilities allow tennis to be played all year round, because rain, wet courts, and high heat have been overcome. In playing tennis many goals are achieved, including those who want to expand relationships, maintain and improve health, recreation, education, achievement, and a job.

Serving in the game of tennis is a very important basic technique because it will not be obtained without serving first (Anwar, Handayani, and Himawan 2022; Gatot Margisal Utomo and Daru Cahyono 2020). Serve is one of the basic techniques in the game of tennis, and is a sign that the game is starting (Herliana 2020; Kurdi and Qomarrullah 2020). In subsequent developments, the service is no longer considered the start of the game but is a form of the first attack. Thus, the server must be done as well as possible so that it is difficult for the opponent to return, thus earning points for the player who serves.

There are three types of serve in tennis. The first is the kick serve, the second is the slice serve, and the third is the twist serve (Dharmadi and Kanca 2019). In doing a good service, many aspects must be considered, namely each player must have strong concentration, good foot and body movement, ready attitude, racket grip, and follow-up motion (Antúnez et al. 2012; Gromeier, Meier, and Schack 2020).

To get good service results, one of them is to prepare a service skill training program, namely by practicing the accuracy of the direction and placement of the ball (Dewanti et al. 2020). A good service must be able to give surprises to the recipient by not using the same way of serving, namely (giving a certain speed to the ball, giving the ball a fast spin, placing the ball in the opponent's serve room in the place he wants, not making one type of service) (Grambow et al. 2020).

This research is important because, in its application, the service is a golden opportunity for players to get points, so to get good service results, the

training program in this service technique must be right so that the service can have the desired direction and speed. A successful performance in a tennis match is how to hit the ball accurately to areas that are strategically advantageous on the field (Masrun, Alnedral, and Damrah 2022). The need for a deeper study of how to prepare a service skill training program is to train the accuracy of the direction and placement of the ball.

Almost the same research has been conducted with the results of expert test analysis obtained a percentage of 80%, small group test obtained a percentage of 85%, and large group test obtained a percentage of 92% so that the research product can be used as a model for learning tennis court services (Setyawan and Irwansyah 2019). The difference with this research is that the method used in previous research is the research and development method, while the research that will be carried out is using the experimental method. This experimental method tests the finished product to make it more convincing that it can be used in the training process.

METHOD

This research includes experimental research, which will see the difference between the initial test (pre-test) and the final test (post-test) in experimental people who are treated for 30 times of exercise with an exercise program that has been arranged systematically and efficiently by considering the rules. Sampling rules and coaching rules. The population in this study were all Odd Semester Penjaskesrek students at FKIP Halu Oleo University, totaling 959 students. The sample in this study used purposive sampling which was taken with the condition that the students were active, male, and also actively participated in tennis courses so 20 student samples were taken.

There are several methods for determining the initial training load so that the success of a program can be known, among others, namely the maximum pulse rate (DNM) = 220 - Age, determining the dose of exercise with Maximum Repetitions (RM), and increasing the pulse rate. In this study, the maximum pulse

rate method will be used (Giriwijoyo and Sidik 2013). This must reach a training pulse of 80-90% DNM, for example, the age of our training child is 20 years, which means, $220 - 20 \text{ years} = 200$, two hundred is the pulse maximum for the child, the exercise is said to be good if it reaches 80-90% of the maximum pulse if the maximum pulse is 200, the pulse at the end of the exercise must reach 160-180 times in one minute. Those are some ways to determine the dose of exercise to get maximum results.

The instrument for placing and serving punches in this study uses the "Hewitt's Tennis Achievement Test" from AAHPER which has a certain Validity value and Reliability value, with a validity value of 0.93 listed in the CXV table listed in the scoring scale board for Hewitt's service test with the category certain value, while the reliability value is 0.94 (J.E. Hewitt's tennis achievement test). Pictures or instrument tools are as follows:

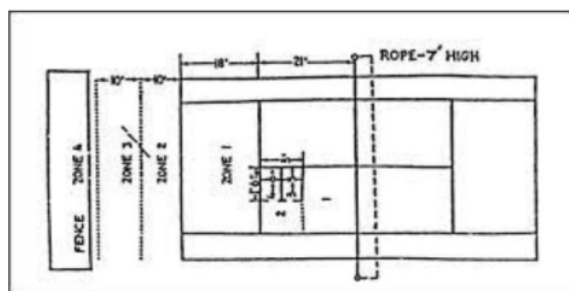


Figure 1. Service placement field

The equipment uses the correct service field. A piece of rope stretched over the net at a height of 7 feet or 2.13 meters from the floor, a good racket, and a tennis ball. Data analysis uses analysis in the form of numbers. For the significant test, the t-test was used for correlated samples using the short formula.

RESULT AND DISCUSSION

The results of the research that will be presented are the mean data and the standard deviation of the research variables. The results obtained are the pre-test mean of 34 and the standard deviation of 0.2 while for the post-test the mean is 42 with a standard deviation of 0.9.

From the results of data processing, it was obtained that the average serviceability during the pre-test was 34 points, with a standard deviation of 0.2, while the average serviceability at the post-test was 42 points, with a standard deviation of 0.9.

Before the T-test or difference test is carried out, a prerequisite test is first carried out to determine whether the pre-test and post-test data are homogeneous. Based on the statistical calculations carried out, it was obtained that $f_{count} 2.0 < f_{table} (1:20) = 2.40$, so the data between the pre-test and post-test of serviceability for Students of the Department of Physical Education, Health and Recreation were homogeneous so that it met the requirements to continue with -t-test.

This study proves that there is a significant difference in serviceability results between the pre-test and post-test after being given regular service training by following the training program properly and correctly.

DISCUSSION

This study aims to determine the effectiveness of the training program to improve service skills in tennis for students of the Department of Physical Education, Health and Recreation. Determination of the sample was taken at random, amounting to 20 students.

The process of carrying out the research was preceded by a pre-test which was intended to determine the initial ability of the sample before being given service training 30 times, after training for 30 times with a frequency of 4 times a week, then a post-test was carried out which was intended to determine the ability of the sample after given training.

Based on the analysis using the t-test between the initial test and the final test, it shows that service training which is carried out regularly and systematically can improve serviceability in the tennis game of Students of the Department of Physical Education, Health and Recreation where $t = 12 > t_{table} (20:0, 0.05) = 2.04$, the results of this statistical calculation show that between pre-test and post-test experienced an increase in serviceability in the tennis game.

Exercise given to beginners in a period of approximately 6 weeks with a frequency of three times a week will get constant results, where the body can adapt to the exercise and will produce a significant increase, doing intensive exercise for 6 to 8 weeks will increase strength, flexibility, and endurance, with push-up exercises in exercise the effect on cells by improving cell quality, which means increasing health and functional ability of cells means increasing the strength of cells undergoing exercise (Harsono 2017; Sajoto 2009).

The optimum exercise stimulus for building explosive power is an exercise with high intensity and fast repetitions (Alfonso-Mora et al. 2019). The impact that occurs as a result of the training is an increase in the percentage of muscle mass, resulting in hypertrophy (increase in the size of muscle fibers) (Sanchis-Moysi et al. 2012). The occurrence of hypertrophy due to changes in skeletal muscle or an increase in diameter in both fast-twitch and slow-twitch muscle fibers in the vastus lateralis, hypertrophy automatically occurs in both types of muscles (Wiarto 2013).

All muscle hypertrophy results from an increase in the number of actin and myosin filaments in each muscle fiber, causing enlargement of each muscle fiber. For endurance training, the muscles will become hypertrophied, slow muscles, while for speed training, the muscles will be hypertrophied, fast muscles (Suharjana 2013).

Increasing the number and size of mitochondria in muscle cells will lead to more effective mitochondrial function. An increase in the number of mitochondria in muscle cells physiologically stimulates improvement in oxygen uptake, besides that as a result of regular and maximal exercise, mitochondria can replicate so that they can direct the dominant energy system to always be ready to provide the energy needed (Sanchis-Moysi et al. 2012).

Because continuous training, it is hoped that it can stimulate the muscle abilities needed to improve maximum serviceability. The implementation of the exercise, still refers to the basic principles of exercise, especially regarding the principle of overload. An increase in the training load in question is an increase in

the number of repetitions of exercise gradually which is increased every week (Hoppe et al. 2016).

The addition of the load was done because the previous load was considered light by the research sample, this was due to adaptation to the exercise that had been done. Physiologically the muscles trained in this push-up exercise are the biceps, triceps, deltoid, and trapezius muscles. When viewed from a biomechanics point of view, service training has similarities to the movement when serving, namely the ability of the arm muscles to work or contract concentrically and eccentrically with maximum power repeatedly (Kichenok 2021).

CONCLUSION

This study produced findings in the form of positive results when tested on samples. After being carried out with a frequency of 4 times a week for 30 days, the researchers concluded that service training can improve serviceability in tennis games for Odd Semester Penjaskesrek students at FKIP Halu Oleo University. This training program can be used as a reference or guideline for coaches, especially those related to improving field service abilities.

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