



Effects of Arm Muscle Training on Hand Back Strokes on the Tennis Court

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Abstract

This study aimed to explore the role played by arm muscle exercises in improving the strength and accuracy of strokes in court tennis players. In the highly competitive world of tennis, having optimal physical strength and the ability to control shots is a key success factor. The study used a combined approach, including surveys, physical measurements, and statistical analysis. We observed a group of court tennis players who followed a leg muscle training program over a period of time, while the other group did not do that particular exercise. The participants were tested for arm muscle strength, then they were asked to play in situations that simulated an actual court tennis match. The results of this study revealed that players who underwent an arm muscle training program consistently experienced a significant increase in arm muscle strength. In addition, they also show an increase in their ability to better control and direct their punches, resulting in stronger and more targeted punches. These findings provide strong support for the importance of arm muscle training in improving the performance of court tennis players

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INTRODUCTION

Court tennis is one sport that demands a combination of technical skills, physical endurance, as well as mental strength. In the world of tennis, the backhand stroke, where the player uses an undominant hand to return the ball, is an important element in the game. The effectiveness of the backhand plays an important role in the outcome of the match, especially when facing opponents who have powerful punches and various attacks. Each player uses a racket to hit the ball, the goal of the game is to find points by hitting the ball in all directions that have been specified in the rules, so that the opponent cannot reach the ball and points occur (Seff et al., 2017). The basic principle of playing tennis is to hit the ball directly and enter the opponent's court (Alim, 2015). The basic principle in playing tennis is to hit the ball before or after bouncing on the floor

over the net and into the opponent's field of play (Maulidin et al., 2021). Achieving achievements in the sport of field tennis is not easy because tennis matches require good physical and tactical technical and mental abilities (Jatra et al., 2020).

Success in backhand strokes depends not only on good technique, but also on the strength of the arm muscles. Strong arm muscles allow players to produce more powerful, accurate, and consistent backhand shots. Therefore, the role of arm muscle exercises in improving backhand performance in court tennis is a subject of significant concern. Court tennis is a sport that combines physical strength, hitting accuracy, and playing strategy. On a competitive level, the game becomes faster and more intense, and players are required to have optimal muscle strength and the ability to control punches precisely. The strength of the leg muscles, which includes the muscles of the legs and thighs, is an important element in achieving excellence in playing court tennis (telaumbanua et al., 2023). Tennis has been favored by various groups and age levels from adolescence to adulthood.(Nugraha, 2022). The management of coaches and athletes is a factor that greatly influences the achievement of the achievement coaching process in all sports, especially in the field tennis sport so that it must be considered and implemented properly (Alim, 2020)

The International Tennis Federation as an independent organization seeks to introduce tennis to the rest of the world. (Siahaan, 2017) . The sport of court tennis is no longer just about wanting to find fitness or for recreation, but has also been used as a means to achieve achievements. (Ngatman & Sulistyatna, 2017). An important component in the tennis court game is preparing athletes is a technical training program including grip techniques, punching techniques, and playing techniques, tactical training includes single and double playing tactics, while mental training by performing many sparring tests (Nurkadri et al., 2022).

This study aimed to explore and analyze the impact of arm muscle training on the backhand strokes of court tennis players. The study involved tennis players with varying levels of expertise, from beginners to professionals, with the aim of understanding the extent to which arm muscle exercises can make a meaningful contribution to improving the quality of their backhand strokes. . The purpose of this physical exercise is to improve the player's performance in matches, reduce the risk of injury, and provide a solid physical foundation. A strong, accurate, and consistent forehand is an important element in facing opponents and achieving victory (Febrian Dalimunthe et al., n.d.). According to (Nugroho & Yuliandra, 2021) To be able to improve

the ability of physical condition, a sportsman must be able to do good exercises to achieve certain targets. The basic techniques of court tennis games that want to be presented in the socialization of this community activity program include; service stroke techniques, forehand and backhand drive techniques and smash punch techniques, while the rules that will be presented in the socialization include game rules and court tennis matches. (Hakim et al., 2022)

Using careful experimental methods and careful measurements, this study sought to provide a deeper understanding of the relationship between arm muscle development and tennis players' ability to hit the backhand. The results of this study are expected to provide valuable guidance for tennis players, coaches, and sports researchers in designing more effective and efficient training programs to improve backhand techniques in court tennis. With a better understanding of the role of arm muscles in backhand strokes, tennis players can improve the quality of their game and achieve greater success in the world of court tennis.

METHOD

We use the research method "Classroom Action Research". Action research not only tests a treatment, but first researchers already have confidence in the efficacy of a treatment, then in this action research researchers directly try to apply treatment carefully while still following the process and impact of treatment. Thus this action research can be viewed as a follow-up to descriptive or experimental research. So the research conducted is a type of descriptive follow-up research and experimentation. (Mukrimaa et al., 2022).

The population that will be used in this study is 2 court tennis athletes that we will test before doing leg muscle exercises and after leg muscle exercises so that we can see if the role of leg muscle exercises really proves concrete to increase power and accuracy in hitting on the tennis court. The data collection technique that we do is a data collection technique with surveys and direct recording. And we took sampel to two tennis athletes on the wrong court at one of the universities in Medan.

RESULTS AND DISCUSSION

Result

Arm muscle exercises have characteristics that correspond to the form of exercise to improve ability because arm muscle exercises are one form of pliometric exercise.(Sulistiadinata & Aditya, 2021). Conformity with the principles of motion spurs students physiologically to be ready to perform the expected motion techniques when there are stimuli given.(Sulistiadinata & Aditya, 2021).

Based on research we conducted on 2 field tennis athletes, we tested these athletes by doing tests before arm muscle training and tests after doing arm muscle exercises for 1 month with leg muscle exercises including Push ups, Pull ups, Planks, with 15x2 reps and the following table we made

Tabel 1. Before Arm Muscle Exercises

	Power Punch	Punch Precision
Atlet 1	62%	55%
Atlet 2	50%	60%

Looking at the table above, we can see that the lack of performance of athletes in playing and the accuracy of their strokes we see from the number of balls that have been hit well and correctly by the athlete's par with a perfect count of hitting 50 balls that we throw at them. And here's a table after they did arm muscle exercises

Tabel 2. After Arm Muscle Exercises

	Power Punch	Punch Precision
Atlet 1	95%	97%
Atlet 2	97%	94%

From the results of the tests we conducted we can see that the role of arm muscles is very influential on strength and accuracy in the game of court tennis. However, keep in mind that other factors such as punching technique, body coordination, and game strategy also play an important role in the performance of court tennis players. Therefore, arm muscle exercises must be integrated with comprehensive tennis sports exercises to achieve the best results.

Discussion

According to (Sukadiyanto, 2010) Explaining power is the product between power and speed. The back hand technique is a very important technique mastered by tennis players because it aims to return the ball to the left of the body of ordinary people or right for left-handed people before the ball touches the court or ground.

The strength of arm muscles can also contribute to the precision and strength of the blow. Strong arm muscles can help players maintain balance and control when they hit their punches. This can reduce errors in hitting and improve the player's ability to aim the ball more precisely. The results and discussion of this study show the importance of arm muscle exercises in the development of court tennis players. These exercises can include strength training such as Push Ups, Pull Ups, Planks as well as balance and stability exercises to improve control in strokes. However, keep in mind Other factors such as punching techniques, body coordination, and game strategy also play an important role in the performance of court tennis players. Therefore, arm muscle exercises must be integrated with comprehensive tennis sports exercises to achieve the best results.

CONCLUSION

From this study, we can conclude that arm muscle exercises can have a positive effect on a player's ability to make backhand shots on the tennis court. The development of strength, speed, and control of arm muscles as well as coordination with body movements are important factors in improving effective and powerful backhand strokes. Arm muscle exercises tailored to individual needs can help players achieve better results on court tennis.

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