Original Article

Serve exercises with eastern and continental grips which is better for beginners improve skills

NOVAN ARUM NUGROHO , SAPTA KUNTA PURNAMA, SLAMET RIYADI, RONY SYAIFULLAH, DIMAS DUTA PUTRA UTAMA

Faculty of Sports. Sebelas Maret University. Surakarta City, Indonesia.

ABSTRACT

The purpose of this study is to find out the effect of serve training with eastern and continental grips, which is better for beginners to improve skills to be more effective, efficient and faster to master court tennis serve techniques. The method used is the experimental method. The sample in the study of 24 people, taken from students of Sports Coaching Education Universitas Sebelas Maret in 2023. The training method used is serve exercises with eastern and continental grips that are done twice a week. The population in the study amounted to 24 students, the number of samples divided by 12 students practicing serve with eastern grips and 12 students practicing serve with continental grips. The instrument test uses the Hewitt achievement test. Data analysis technique using paired sample t-test with signification level <.05. Data testing using SPSS software version 25 for windows. The results showed a significant improvement in skills from the results of serve training with eastern and continental grips. There is a difference between serve practice with eastern and continental grips, it is better to serve using eastern grips for beginners to improve their skills, this is followed by a mean value. Serve training with eastern grip had a value before treatment of 10.17 and after treatment of 19.83. Serve training with continental grip has a value before treatment of 9.58 and after treatment of 15.25. This value shows that exercises with eastern grip are more effective, efficient and faster to master court tennis serve techniques.

Keywords: Physical education, Exercise, Children, Serve, Grip eastern, Grip continental, Tennis skills, Raquet sport.

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Corresponding author. *Sports Science Study Program, Faculty of Sports, Universitas Sebelas Maret, Surakarta City, Central Java 57139, Indonesia.* *https://orcid.org/0009-0006-2702-4661*
E-mail: novanarumn28@student.uns.ac.id
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INTRODUCTION

Tennis is practiced by many people around the world and is the most popular racquet sport (M. Kovacs et al., 2007; Tagliafico et al., 2009). Tennis is an intermittent sport characterized by repetitive high-intensity effort (i.e., acceleration, deceleration, and change of direction and stroke) over a period of time varying with an average of 90 minutes (Fernandez-fernandez et al., 2016; M. S. Kovacs, 2007). Tennis is a sport that requires a high level of physical fitness in some components, tennis players require high performance in most components (M. S. Kovacs, 2007). Skills in tennis are multicompetitive and require technical, physical, tactical, and mental skills especially for beginners (Agustiyanta et al., 2022; Baiget et al., 2019). Performance training is very important needed for beginner players to hone good skills. Tennis practice begins in childhood and can continue into late adulthood (Eygendaal et al., 2007; Registry, 2013). The positive effect that tennis practice shows on physical and mental fitness, the increase in the number of tournaments and competitions determines a strong dedication to training for beginners (Nugroho et al., 2023; Tagliafico et al., 2009). The increasing number of each level of tennis training for beginners and age players over the past few years has been accompanied by the involvement of almost all tennis strokes (Fernandez-fernandez et al., 2016). Changes that occur in training are associated with the way you hold when serving (Fernandez-fernandez et al., 2016). Goals that coordinate and organize larger thoughts and actions while playing tennis predict future success (Kuroda et al., 2023). In the game of tennis, of course, the beginning that must be done is to learn skills in serving (Gubacs-Collins, 2007). On research Fernandez-fernandez et al (2016) The importance of knowing the handling in servicing to avoid the risk of injury for beginners and improve the ability of course. Therefore, on the basis of exploring the use of the handle when serving becomes a strength in the game of play (Meffert et al., 2018).

Service performance is an important fact that can affect performance leading to game results (Meffert et al., 2018). Service performance refers to the percentage, win percentage, placement, and speed of first and second serves (Meffert et al., 2018). While not guaranteed due to easy misses or good returns, it is more likely to maintain service with a good first serve percentage (Amico & Schaefer, 2022). Incoming serve percentage is seen as an important factor in tennis. There are several types of grips in tennis in serving (Mariyanto et al., 2020). However, in this study by knowing the eastern and continental serve grips that will be analysed to determine the performance that will improve skills in the game. Both types of grips have a way of handling eastern grips (i.e., the basic knuckles are on face 3, and the heel pads are between 2 and 3) (Tagliafico et al., 2009) and continental (i.e., the basic knuckle is placed on face number 2 and the heel pad between 1 and 2) (Tagliafico et al., 2009). Both types of grip in basic tennis exercises can be done at the college level (Ericsson, 2008; M. S. Kovacs, 2006). Both were tested with the same treatment at the college student level to find out how much difference in the magnitude of the influence of the eastern grip and continental grip, so that it could be a determinant for serve exercises that can be easily learned.

At a high level of education, basic serve training is important because most of course do not know how to hold well. In today's college tennis education using serves well and making them more stable, active and aggressive is a difficult problem to solve. So, we do indicate to find practical solutions and apply them to the entire teaching process, so that college tennis teachers who are experienced in teaching can pay sufficient attention to good serve technique by testing both the effect of serve with grip eastern and continental in teaching, thus providing some theoretical foundation for students to learn tennis technique actively.

MATERIALS AND METHOD

Participants

The sample in this study is 24 taken from students of Sports Coaching Education of Sebelas Maret University in 2023. The characteristics of the sample were sportsmen who had never played tennis so they could not yet play tennis. There were 12 students divided into two groups of group A1 (Exercise serve with eastern grip) and 12 students group A2 (Practice serve with continental grip).

Method

This study uses an experimental method to determine the effect of the treatment of independent variables on dependent variables in research.

Variables instrument

Serve training using grip eastern (A1) and grip continental (A2) was the independent variable in this study, the dependent variable in this study was tennis serve skills. The data collection technique uses a serve accuracy test from the Hewitt achievement test. This test is a test to measure the accuracy of beginner serve tennis to improve skills.

Procedure

The initial and final tests for collecting data on serve tennis accuracy skills in this study used Hewitt achievement test of tennis serve accuracy, treatment with serve exercises which were divided into two groups, group A1 serve exercises using eastern grips and group A2 serve exercises using continental grips. The practice is carried out with the progress of the practice starting with an introduction to grip holding techniques and the correct technique in serving tennis. After being instructed on how to serve well, serve training begins with the easiest progress towards the difficult one. The study was conducted on the tennis court FKIP UNS for six weeks, the frequency of training 2 times a week. Each practice meeting is conducted for 3 hours.

Data analysis

Paired sample t-test was used to analyse the data in this study. At the level of significance $\alpha = .05$. The normality test and homogeneity test will be carried out from the results of the serve skill test using the Barlet-test.

RESULTS

The results of the study were obtained from the final test of the results of serve accuracy skills from the Hewitt achievement test on the tennis court, which resulted from training using the serve practice method using eastern grip and continental grip. The serve training approach uses eastern and continental grips with predetermined training progress and training intervals. Thus, the total score of the serve accuracy skill test in the game of court tennis is influenced by the way the grip of the court tennis racket is held.

Eastern serve grip exercise

The calculation results obtained from the eastern serve grip exercise can be seen in Table 1.

Based on the results of Table 1 analysis with paired test obtained probability values of $.000 < .05$, showing that serve training using eastern grip affects court tennis serve accuracy skills. The difference in average

results before treatment was 10.17, and the average after treatment was 19.83 with an increase of 9.66. The average value after treatment is greater than the average before treatment.

Table 1. Pre-test and post-test results Eastern serve grip practice.

		Mean	N	SD	Std. E Mean	Correlation	t	Sig.
A1	Pre-test	10.17	12	5.340	1.542	.892	-13.602	.000
	Post-test	19.83	12	4.282	1.236			

Continental serve grip workout

The calculation results obtained from the continental serve grip exercise can be seen in Table 2.

Based on the results of Table 2 analysis with paired test obtained probability values of .000 < .05, showing that serve training using continental grips affects court tennis serve accuracy skills. The difference in mean difference before treatment was 9.58, and the average after treatment was 15.25 with an increase of 5.67. The average value after treatment is greater than the average before treatment.

Table 2. Pret-test and post-test results Continental serve grip exercise.

		Mean	N	SD	Std. E Mean	Correlation	t	Sig.
A2	Pre-test	9.58	12	3.801	1.097	.889	-9.333	.000
	Post-test	15.25	12	4.555	1.315			

Comparison of eastern serve grip training with continental grip

The calculation results obtained from the comparison of serve exercises using eastern and continental grips can be seen in Table 3.

Table 3. Comparison of eastern serve grip training with continental grip.

Post-test Group	N	Mean	SD	Std. E Mean	F	t	Sig
A1	12	19.83	3.801	1.097	.189	2.540	.019
A2	12	15.25	4.555	1.315			

Based on the results of Table 3 analysis, a probability value of .019 > .05 was obtained, so it can be implied that serve training using eastern grips or continental grips does not affect serve training to improve tennis serve accuracy skills. However, it is known that the average serve training using eastern grip before 10.17 and after 19.83. The average score of serve training using continental grip before 9.58 and after treatment was 15.25. For beginners, it is more efficient and effective to use the eastern grip to improve tennis serve accuracy skills. The accuracy of the court tennis serve for beginners is more effective and efficient using the eastern grip, this is shown from the average results of serve practice using the eastern grip with continental.

DISCUSSION

The results of this study have an influence on serve practice with the aim of improving playing skills in beginners. However, grips with eastern grips have more advantages in training to speed up playing skills compared to continental grips so that they will be more skilled in playing faster (Lucki & Nicolay, 2007; Tagliafico et al., 2009). The speed and accuracy of the serve also affect the moving force and return execution, which indirectly affects the efficiency of the returning player (Filipčič et al., 2017). Below the

researcher describes the process of implementing the exercise by giving serve exercises with eastern and continental grips on the same treatment in a sample of college students.

Figure 1. Eastern Grip group A1. Figure 2. Grip Continental group A2.

Based on the image above, the Eastern Grip is considered suitable for different styles of play, comfortable for beginners, and customizable for all surfaces (Tagliafico et al., 2009). A continental grip, this grip was once a universal grip used to hit almost all strokes: forehand, backhand, voly, and serve and is difficult to learn quickly for beginners because it requires flexy-extension movements in the legs, flex of the blow, and pronation movements in the arms and when impact with the ball the cross section of the racket is narrower than the eastern grip (Tagliafico et al., 2009). In the process of implementation in the field with group A1 and group A2, both treatments tested serve exercises were given for six weeks at a frequency of 2 times a week with the same repetition for the same 3 hours to beginners in college students but gave results with different changes.

Both types of handles produce changes with different average increases occurring during the initial and final tests. The average increase in the A1 group with an eastern handle of 9.66 was better than the average increase in the continental grip group of 5.67. So, it is clearly explained that eastern snacks in the A2 group have a better effect on serving exercises for beginners at the college level. Although in independent testing of test samples to determine the difference between the two treatments was carried out with results that had no effect.

Serve exercises using eastern grips are also considered easy to learn for beginners at the college level with the age of 17 and above (Abrams et al., 2012). At the time of play also with eastern grip helps for beginners because lower service speed returns have more chances to put their opponents under time pressure and force faster moves (Filipčič et al., 2017). It is also a concern for beginners that in professional games a percentage of influence by serving well can help to earn points (O'Donoghue & Brown, 2008). Players who win maintain their first serve percentage when facing break points but still lose a higher percentage of points (Meffert et al., 2018). For a professional who follows the tournament circuit, a strong serve shot is a very special asset (Mariyanto et al., 2020). Service failure can result from injury to the player and affect the continuation of the match (Mariyanto et al., 2020).

So for beginners to avoid a little risk of injury obtained by practicing eastern grip serve (Dines et al., 2015; Tagliafico et al., 2009). Because for beginners at the college level, the first thing he thinks about doing serve techniques is to avoid injuries. So that the suggestion that can be generated from this study is to provide

training with eastern grip because it is considered better, effective, efficient and right on target and faster mastering serve techniques (Keller et al., 2021).

CONCLUSIONS

In conclusion, serve training with eastern and continental grip is a basic technique of tennis and is a major focus and difficulty in higher education. Comparing serve techniques with eastern grips is more suitable for beginners to improve skills at the college level. Serve with eastern grip is proven to be better, effective, efficient and precise on target and more quickly master serve techniques. Serve with eastern grip does not use too much flexy motion – extension of the limb, pronation movement on the arm or no need to change the angle of the racket when impact with the ball, and when impact with the ball the cross section of the racket is wider, and the ball is easier to hit. However, in general there is a lack of scientific and proven training methods among college tennis players. Therefore, in the process of increasing the ability of serve. In addition, for beginners to improve skills to be more effective, efficient and faster to master court tennis serve techniques college tennis players must also have proven training methods, to ensure a scientific and systematic approach to technique, so that students can continue to improve their serve.

AUTHOR CONTRIBUTIONS

Novan Arum Nugroho: Conceptualization, methodology, writing—original draft preparation, writing—review and editing. Sapta Kunta Purnama: supervision, formal analysis. Slamet Riyadi: validation, investigation. Rony Syaifullah: management, resources and data curation. Dimas Duta Putra Utama: final manuscript editor, project administration, Musa Hubies.

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