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The Effect Of Foot Reaction Speed Training Toward The Reception Of The First Ball In Sepak Takraw

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Abstract

The purpose of this study was to assess the effectiveness of foot reaction speed training in improving first ball reception skills, determine the difference between athletes who have high and low foot reaction speed, and identify factors that affect the effectiveness of foot reaction speed training in men's sepak takraw athletes of Batik Al-Syaffa club Pekalongan Regency. This research is a type of quantitative research that uses experimental methods with a one group pretest-posttest design. The sampling technique used was total sampling. This study uses 2 variables, namely the independent and dependent variables. The treatment in this study is in the form of a foot reaction speed training program (mastering the circle), where the implementation mechanism is two people divided from a total of 20 people who are research subjects will be paired (10 pairs). The results of the paired sample T test conducted using the SPSS Version 31 application show the results obtained a significance value (2 tailed) of 0.001 which can be concluded that there is a significant difference in the impact of factors that were tried some time ago and after treatment.

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INTRODUCTION

Sports and physical education are closely related, in general, the definition of sport is as a form of physical and mental exercise that is valuable for maintaining and improving the quality of a person's well-being. Whereas basically physical education is an educational preparation that utilizes physical actions to create comprehensive changes in human quality, both physically, rationally and emotionally (Wijayanti et al., 2022).

Many factors can affect the performance of sepak takraw players, including the technical element. Game techniques will not occur by themselves without regular training (Raharjo, 2012). Receiving the first ball is an effort to defend the area from the opponent's attack which starts through the serve. According to (Kartika & Hakim, 2020), although starting or serving is a technique used to start the game, the game will not continue if the team receiving the starting kick is unable to receive and play the ball. In the game of sepak takraw, apart from carrying out the main attack on a team, it is also no stranger to receiving the ball from the opponent or the first ball. Receiving sepak mula is a work motion that is no less important, sepak mula is a challenge that must be mastered by every player because the failure of a player to receive sepak mula (service) will give numbers (points) to the team that made sepak mula, every player who receives sepak mula (service) should make several work movements to organize a counterattack or counterattack against the team that made the sepak mula (service). Receiving the first ball in the sepak takraw game is very important,

because the first ball is the first touch to start an attack on the opponent in the match (Yudanto & Fatimah, 2022). From the explanation above, it can be concluded that not only the ability of talent and potential must be possessed, but the development of organized coaching is also the key to successful achievement. In order to achieve the achievements you want to achieve, a series of exercises is needed as an effort to develop maximum potential in a person.

The influence of training has a huge impact on the development of motor skills. Influence itself is a force that can shape or change something else. According to Hugiono and Poerwantana "influence is a push or persuasion and is shaping an effect." Meanwhile, according to Badadu and Zain "Influence is the power that causes something to happen, something that shapes or changes something else and submits or follows because of power or power." Meanwhile, Louis Gottschalk defines influence as an effect that is marked to shape human thoughts and behavior both individually and collectively (Desita, 2021).

According to Harsono (2015), "Training can be a proper preparation for doing exercises or work, which is done repeatedly, by gradually increasing the training or work load". Meanwhile, according to Mylsidayu (2015), explains that "the definition of exercise which comes from the word exercise is the main device in the daily training process to improve the quality of the function of the human organ framework making it easier for competitors to idealize its development (Sarifudin & Sumarna, 2022). The exercises applied must be oriented towards

the maximum development of motor abilities tailored to the needs of athletes. According to Basuki Wibowo (2002: 05) an athlete is a subject or someone who works or pursues a particular sport and achieves in that sport, while according to Peter Salim (1991: 55), athletes are sportsmen, especially in fields that require strength, agility and speed. In addition, according to Monty P. (2002: 29), athletes are individuals who have their own uniqueness, who have their own talents, behavior patterns and personalities, as well as backgrounds that influence specifics in themselves (Zufri & Tyoso, 2017).

One way to be able to determine training that suits the needs of athletes in order to development achieve maximum skill is to identify the weaknesses of these athletes. Then determine the exercises that are suitable for the existing problems. Training in sports physically, mentally and also technically should be able to follow developments in the scientific field of sports coaching (Prasetyo, 2015) in (Pernandes & Sutisjana, 2018). There are many physical training methods to improve physical conditions such as endurance training, speed, power, and others in general (Pérez-Villalba et al., 2018) (Hidayat, 2019). Then in general there are still psychological training methods that can increase the will to win, minimize anxiety, or even so that athletes become more confident in their abilities (Barker & Winter, 2014) (Haryanto et al., 2021) in (Masa et al., 2022).

According to Prasetya's explanation, one of the sepak takraw coaches who is now also actively coaching at SMK N 1 Sragi and also the Pekalongan Batik Al-Syaffa Club, suggested that so far

in the sepak takraw coaching in the regions or training centers / clubs in Pekalongan only focused on mastering basic attacking techniques, even though the physical condition component of athletes needs to be considered in order to achieve first ball reception skills. Physical condition is a person's capacity to perform physical labor with graded abilities.

In addition to mastering the basic techniques of sepak takraw, athletes must have physical condition components consisting of: endurance, strength, reaction, speed, flexibility, balance, accuracy, and coordination and sense of movement. Increasing achievement through training camp programs must be planned (planning) as well as possible, adapted to the times (actuating), arranged regularly (systematic), managed with good leadership (directing), supervision (controlling) is optimal, and must be assessed (evaluating) to determine the development or achievement that has been previously determined (Winata et al., 2015). Sepak Takraw players must have good physical conditions such as agility including foot reaction when receiving the first ball.

Agility is a person's ability to change direction quickly and precisely while moving without losing balance. Agility is closely related to speed and adaptability. Without both elements, a person cannot move agilely. The balance factor is also very influential on a person's agility ability. The role of agility is very important in receiving the first ball because when the ball comes the player must be able to determine the movement with a fast and precise time (Yudanto & Fatimah, 2022). Foot reaction speed is part of

agility, which may be a person's capacity to respond to a stimulus in the shortest possible time. Response speed is divided into two, namely single response and compound response. The speed of a single response could be a person's ability to respond to a shock that has been known in its direction and target in the shortest possible time.

That means, in recent times it has been developing in the athlete's mind, there has been an introduction and direction and target of the machine arrangement that will be run so that the strengthening conditions can be anticipated when the movement is carried out. The speed of the combined response could be a person's capacity to respond to stimuli whose direction and target are not yet known in the shortest possible time. This means that in recent times there has been development in the minds of athletes, there has been recognition, but the direction and target of the arrangement of movements (movements) that will be carried out are not yet known (Sukadiyanto, 2010) in (Asmira Oktavia, Sudiadharma, 2020).

Good physical condition will improve the ability to play athletes, especially in performing the first ball reception skills in sepak takraw. Material in the form of theory, benefits and goals as well as practice of exercises to maintain physical fitness such as cardiovascular endurance training with Multi Stage Fitness (MFT) jogging, aerobics and muscle endurance training such as push ups, back ups and squats are also important to do in order to get good physical condition. Based on the data that researchers obtained from measuring 10 people who represented the sample in the

field, it was found that the ability to receive the first ball of sepak takraw in athletes who participated in the training center at Klub Batik Al-Syaffa Pekalongan was still not good, such as: the ball jumped and the ball could not be controlled properly when receiving the first ball during training. (Setiawan et al., 2020) Based on this depiction of the foundation problem is of interest to analysts in conducting research related to "the effect of foot reaction speed training toward receiving the first ball in sepak takraw athletes at Batik Al-Syaffa club, Pekalongan Regency" which will be conducted in Samborejo, Tirto, Pekalongan.

The reason for this reflection is to evaluate the feasibility of foot reaction speed training in improving first ball reception skills, determine the differences between athletes who have high and low foot reaction speed, and identify factors that affect the effectiveness of foot reaction speed training in men's sepak takraw athletes of Batik Al-Syaffa Pekalongan Regency.

METHODS

Research has a function to understand problems, solve problems, anticipate problems, and make progress (Sugiyono, 2019). This studies uses a quantitative approach. Quantitative research is a study that uses numbers in collecting data and in interpreting the results (Arikunto, 2010). This research is a quantitative study that uses experimental methods with the pattern used is one group pretest-posttest design, where there is a pretest before treatment is given (*treatment*) so that the treatment

results can be known more precisely, because this can be compared with the condition some time ago when treatment was being given. Conducted 4 times a week, on Wednesday, Friday, Saturday and Sunday for 16 meetings in one month.

Participants

Population is defined as all individuals, objects, or events that are the main subject of investigation in the study (Candra Susanto et al., 2024). The population in this study were men's sepak takraw athletes from the Batik Al-Syaffa club, Pekalongan Regency, totaling 20 people. Samples taken from the population must be representative or represent (Sugiyono, 2019). The sample to be used in this study was the sepak takraw athletes of the Batik Al-Syaffa Club, Pekalongan Regency, totaling 20 people. The technique used in this study was total sampling, namely sampling from the entire population or members. The research was conducted at the training ground every afternoon from 15.30 - 17.30 WIB.

Sampling Procedures

The examination strategy in this reflection is a total sampling. Total sampling can be an examination procedure when all individuals in the population are used as test subjects. (Nabila et al., 2024). Total sampling is also known as a census, where all members of the population are sampled. This technique is used when the population is relatively small, less than 30 people or research that wants to make

generalizations with very small errors. In this study the population was 20 athletes aged 17-30 years, so the sample used was 20 people with the same criteria.

Materials and Apparatus

A study of course requires a measuring instrument that is used to collect data from the object under study. Instruments in quantitative research are very influential because using the right instrument will be able to measure the variables that will be observed by researchers (Ardiansyah & Jailani, 2023). In this study, the tools used by researchers in collecting data are blanks and stationery. The instrument used in the study entitled The Effect of Foot Reaction Speed Training toward First Ball Reception in Pekalongan Regency Batik Al-Syaffa Club Sepak Takraw Athletes is a test of the ability to receive the first ball through the tekong serve.

Procedures

This study uses a standard procedure for conducting tests. The first ball reception test in sepak takraw has been developed by researchers with a validity value = 0.547 and reliability = 0.690 (Kusuma Wardani1, 2022). Therefore, the first ball reception test through the tekong serve is feasible to use. The following is the standard procedure for conducting the test:

- The service receiver is ready to receive the first ball from the tekong with their respective positions in the field.
- The service is carried out by the tekong with the direction of the free ball, either with a hard or slow blow.

- Each player receives the first ball 10 times.
- The service receiver tries to receive the first ball from the tekong as well as possible.
- The total value that will be received by the testee is the total of 10 times receiving the service from the tekong.

Design or Data Analysis

This research can be a quantitative research that uses an experimental method with the design used being a one group pretest-posttest design, where there is a pretest conducted before treatment is given so that the treatment results can be known more precisely, because it can be compared with the conditions some time ago when the treatment was given.

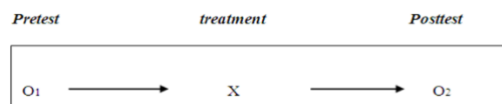


Figure 1. one group pretest posttest design

Description :

O1: initial test (pretest) conducted before giving treatment (treatment).

X: treatment (treatment) foot reaction speed training on all sample members.

O2: the final test (posttest) conducted after being given treatment (treatment).

Changes between the pretest and posttest results of the experimental group can occur due to the influence of the treatment given (treatment). This research was conducted 4 times a week, on Wednesday, Friday, Saturday and Sunday, with an overall duration of 120 minutes of exercise. In this study, researchers took 16

meetings with 4 times the frequency of training in one week.

Data analysis is a technique used to calculate data so that it can be presented systematically. According to Sugiyono (2015), characterizes information as an efficient handling of searching and compiling information obtained from field notes, interviews and documentation. This process includes organizing data in categories, breaking down into synthesis units, compiling into patterns, selecting important names and those to be studied, and making conclusions so that the data can be easily understood by oneself or others. (Priyatno, 2010), data analysis in quantitative research requires the use of statistical formulas or statistical assistance programs such as SPSS or S-PLUS.

This study used three forms of data analysis. The normality test was used to check whether the data were taken from a population that is regularly distributed, while the homogeneity test is carried out to decide whether two or more test groups belonged to populations with the same variance. Finally, the paired t-test was applied as a hypothesis testing method for dependent data sets, where measurements are taken from the same subject under different conditions (Marhaeni & Nuryadi, 2022).

RESULT

The normality test of information using the Kolmogorov-Smirnov and Shapiro Wilk tests, to decide whether the information is normally distributed or not. Based on the results of the typicality test conducted using the SPSS Adaptation

31 application, the pretest significance value obtained 0.232 and 0.202 for the posttest significance value. This value if referring to the normality test guidelines used, namely if the sig value > 0.05 , at that time the information was normally distributed. From the results above, because the significance value of the pretest and posttest information is more than 0.05, it can be concluded that the information is normally distributed.

Tests of Normality							
Kelas		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Hasil treatment	Pre-Test Experiment (OGPPD)	.152	20	.200 ^a	.939	20	.232
	Post-Test Experiment (OGPPD)	.187	20	.066	.936	20	.202

^a. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

^a. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Figure 2. Normality test results

Homogeneity test is a test conducted to determine whether the data legitimate origin a homogeneous population or not, carried out to ensure that the basic assumptions of uniform or homogeneous distribution are met before applying other statistical tests. The data homogeneity test obtained a significance value of 0.260. Referring to the homogeneity test guidelines, if the significance value (based on mean) > 0.05 , then the data has a homogeneous variance. Based on earnings of the homogeneity test above, because the data obtained a value of 0.260, where the value is greater than sig (based on mean) > 0.05 , it can be concluded that the data a homogeneous variance, so statistical analysis can be continued legitimately.

Test of Homogeneity of Variance					
Hasil Treatment		Levene Statistic	df1	df2	Sig.
	Based on Mean	1.308	1	38	.260
	Based on Median	.898	1	38	.349
	Based on Median and with adjusted df	.898	1	35.528	.350
	Based on trimmed mean	1.182	1	38	.284

Figure 3. Homogeneity test results

Paired sample T test using SPSS software version 31. *The paired sample T test* is a parametric test used to compare the average of two groups of data that are paired or dependent. Aims to see if there is a significant difference between two sets of data coming from the same subject. From the pretest and posttest test results, a significance value (2 tailed) of 0.001 was obtained. Referring to the provisions of this test, if the significance value (2 tailed) < 0.05 then H_0 (no significant effect) is rejected and H_a (there is a significant effect) is accepted. From the explanation above, where the results of the paired t-test obtained a sig value (2 followed by) 0.001, which means it is smaller than the sig value (2 followed by) 0.05, it can be concluded that there's a critical distinction significant difference in influence between the factors tested before and after treatment.

Paired Samples Test									
		Paired Differences						Significance	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	
					Lower	Upper			
Pair 1	Pre-Test/Post-Test treatment	-5.450	1.986	.444	-6.380	-4.520	-12.272	19	<.001

Figure 4. Paired t test results

Table 1. Pretest posttest results

Category	pretest	posttest
total	341	450
average	17,5	22,5
standart deviation	4.071	5.135
percentage	42%	56%

		Descriptives		Statistic	Std. Error
Hasil Treatment	Pre-Test Experiment (OGPPD)	Mean		17.05	.910
		95% Confidence Interval for Mean	Lower Bound	15.14	
			Upper Bound	18.96	
		5% Trimmed Mean		17.00	
		Median		16.00	
		Variance		16.576	
		Std. Deviation		4.071	
		Minimum		11	
		Maximum		24	
		Range		13	
		Interquartile Range		6	
		Skewness		.365	.512
		Kurtosis		-.969	.992
	Post-Test Experiment (OGPPD)	Mean		22.50	1.148
		95% Confidence Interval for Mean	Lower Bound	20.10	
			Upper Bound	24.90	
		5% Trimmed Mean		22.33	
		Median		21.00	
		Variance		26.368	
		Std. Deviation		5.135	
		Minimum		15	
		Maximum		33	
		Range		18	
		Interquartile Range		9	
		Skewness		.536	.512
		Kurtosis		-.780	.992

		Paired Samples Statistics			
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Test treatment	17.05	20	4.071	.910
	Post-Test treatment	22.50	20	5.135	1.148

Figure 5. descriptive statistics

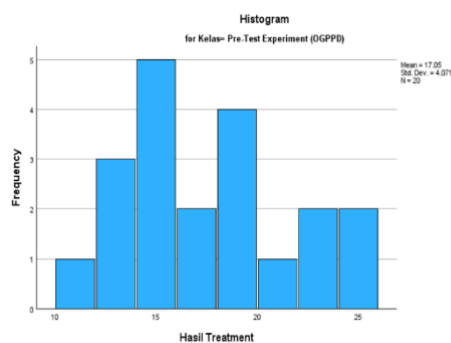


Figure 6. Histogram of pretest

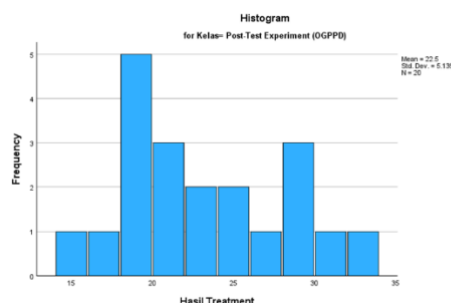


Figure 7. Histogram of posttest

DISCUSSION

From earnings of the research that has been conducted, foot reaction speed training is proven to improve first ball reception skills in men's sepak takraw athletes of Batik Al-Syaffa club, Pekalongan Regency. This finding is further validated by statistical tests, where the data that is distributed is said to be normal and homogeneous, along with the value of first ball reception skills that increased significantly after being treated for 16 meetings, as evidenced by a significance value of 0.001 ($p < 0.05$). This finding is in line with theoretical perspectives that emphasize the important role of foot reaction in anticipation of receiving the first ball. Sepak sila, sepak kura, and memaha are the basis used to hold, control and pass.

Players will reach their level of proficiency if they have the accuracy of contact, beauty, and softness in doing sepak sila (Semarayasa, 2016). In the game of sepak takraw the role of the foot is the main role in playing the ball. The ball must not touch any part of the player's body other than the feet, thighs, chest, head, and shoulders during the game. The ball will be declared dead if it touches the hand, floor, or objects outside the field. On the other hand, both feet are used to stand, jump forward, left, right or up. Mastery of skills in every sport, in this case sepak takraw, depends on mastery of basic skills, including locomotor skills, non-locomotor skills and manipulative skills.

Locomotor skills are a movement of the limbs in a state where the body's

weight point moves from one place to another, non-locomotor skills are carried out by moving the limbs involving muscles and joints in a sedentary, static body state, with the feet still resting on the fulcrum or hands still holding on to the handle (Nugraha et al., 2018), while according to (TRIAJI, 2021), manipulative skills are the ability to use limbs, such as hands or feet to control the ball. These three skills are the main key to mastering all the basic techniques in sepak takraw.

This of course must be supported by good physical condition, because if an athlete has a poor physical condition, he will have difficulty doing sports activities and experience excessive fatigue (Amirudin & Abdillah, 2020). In research (Suwardi, 2015), entitled "The Effect of the First Ball Acceptance Training Method with Throws and Using a Racket on First Ball Acceptance in Jepara Regency Sepak Takraw PPOP Athletes", states that there is no effect of training with the first ball acceptance training method with coach throws and blows using a racket and has no difference among the first ball acceptance training method with coach throws or racket blows.

This shows that to achieve maximum development, not only using a good and correct training program, success in training can be obtained if athletes really understand and understand what and how the purpose of an exercise.

CONCLUSION

From earnings of research, discussion, and data processing that has been carried out, as well as with the formulation of the problems that have been made, it can be concluded that there are noteworthy contrasts in influence on the variables tested before being given treatment (*treatment*) foot reaction speed after training program (mastering the circle) and being given treatment (*treatment*) foot reaction speed training program (*mastering the circle*). This can be seen from the conclusion of the pretest and posttest tests which obtained a significance value (following 2) of 0.001. Referring to the formulation of this test, if the significance value (following 2) is 0.05 then H_0 (no significant effect) is rejected and H_a (there is a significant effect) is accepted, then it can be concluded that there is a significant difference in the influence of the factors tested both before and after treatment.

ADVICE

Based on the research that has been carried out by the researcher, the researcher suggests to the parties related to him among others: 1. Trainers should be able to make new innovations in providing training programs, both in providing material, strategies, methods and techniques. With this innovation, it is hoped that it can improve the basic technical skills of each athlete, especially in the skill of receiving the first ball of sepak takraw. 2. For future researchers, there needs to be more careful preparation in implementing the first ball reception

training program (mastering the circle) including the use of media, scheduling learning, and developing learning concepts. The goal is to achieve optimal results in accordance with the targets that have been set.

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