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## THE EFFECT OF TRAINING METHODS *SPEED PLAY* ON 100 METER RUN SKILLS

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### Abstract

The purpose of this study was to determine the effect of the training method *speed play* on 100 meter running skills. The type of this research is experimental research with *one group pre test post test design*. Sampling was done by *total sampling technique*, ie the entire population was used as a sample. The instrument used in this study was the 100 meter running test. From the calculation results, it is known that the correlation value of the pre-test and post-test of the 100-meter run is obtained by the calculated r value = 0.89 with the r table value = 0.423 so that the KD value or contribution value is 79.21%, with the t-test result being 8,82. Conclusion There is an effect of speed play training method on 100 meter running skills.

**Keywords:** 100 Meter Run, Speed Play Exercise Method

### INTRODUCTION

Skills in sports cannot be separated from the involvement of large muscles and smooth muscles and also cannot be separated from the involvement of mental activities. Thus, skill is an indicator that determines the level of mastery and level of proficiency in something that will require one's body movements.

(Sofyan, 2011) said that these skills are very necessary in this case reflecting a person's level of mastery and proficiency. Thus, to be able and skilled will not be separated from physical activity, whether it involves large muscles or involves smooth muscles, so that in addition to mental activities, nervous mental also processes information to be used as movement.

In the running technique *sprint* is a determining factor to produce speed, if the running technique is done incorrectly, then the speed in running will not be able to do quickly. So that the reaction speed becomes less, the frequency of swings and footsteps is not so much (not fast), and the energy we need to run will be greater (a lot). Thus, the technical training factor has a very large influence on performing movement skills that require an element of speed.

In order to develop speed, both coaches and athletes must understand the factors that can affect a person's ability to produce high-speed movements. The ability to run fast is strongly influenced by several physiological and performance factors, namely: the energy system and the neuromuscular system. (Johansyah, 2013)

Confirmed by (Will, 2014) "*The two anaerobic energy systems are the anaerobic lactic system and the anaerobic glycolytic system. Both produce energy without the presence of cellular oxygen. The difference in the two is the fuel substrate used to create adenosine triphosphate (ATP) energy for cellular use.*

The two anaerobic energy systems are the anaerobic lactic system and the anaerobic glycolytic system. Both systems can produce energy in the absence of cellular oxygen. But the difference in the two systems is the fuel substrate that will be used in creating adenosine triphosphate (ATP) energy for cellular use.

The 100m running workout relies on a direct anaerobic energy system, which supplies high-powered energy for up to 6-8 seconds. It all depends on the chemicals in the body that are stored, such as creatine phosphate and there is no dependence on oxygen to provide energy. Regular speed training can develop the body's capacity to recharge more quickly between efforts to improve recovery.

According to (Farsani & Rezaeimanesh, 2011) suggests that “*Among the body's functioning system, the respiratory system is of special value. Because of an important and prominent role of this system in metabolism and providing the requested energy for different body's tissues and organs, so it is seriously influenced by short & long term exercises*”.

Athletics is a form of daily human activities that are contested in the form of walking, throwing, jumping and running. Therefore, athletics is the basis for sports coaches because all numbers in athletics already represent every sport and the facilities and infrastructure are also easy to find and do not require a large amount of money to perform each athletic number.

According to (Mochamad, 2004) said running is the frequency of steps that are accelerated so that when running the body tends to float. In the sense of the word, when running, both feet must not touch the ground, at least one foot is still touching the ground. Meanwhile (Sukirno, 2012) Running is a forward motion to move the body as quickly as possible, both feet are there when floating and not attached to the ground or floor.

*Sprints* is one of the race numbers in athletics. *Sprint* is all running competitions in which participants run at maximum speed over the distance covered. Up to a distance of 400 meters is still classified as a or *sprint*. There are several absolute factors, which can determine the good or bad in a *sprint*, including three things such as *start*, *movement sprint*, and *finish*.

At the time of running, there are the best procedures and the correct body position at the start, decisive on the athlete's success in winning during the race, because a runner can optimize the power and strength of his repulsion at the signal *start*. The most important thing for runners to produce good movement is at the height of the knees and thighs when running and free arm movements to maintain stability and the body is leaning forward 25 degrees.

It's all the same as stated (Ed, 2009) “*Sprinting involves several elements: the start, acceleration, full stride, and finish. Each stage is critical. For instance, it's difficult to overcome a slow start to win a race. Likewise, a quick start is useless unless it's followed by brisk acceleration, powerful stride, and strong finish*”.

Short distance running involves several elements: start, acceleration, full stride, and *finish*. Each stage is very important. For example, it is difficult to overcome a slow start to win a race. Likewise, a quick start is useless unless it is followed by quick acceleration, a strong stride, and a strong finish.

The runner *sprint* will run at high speed. To support the ability of a runner, it is necessary to have a type of muscle that has fast contractions or is often called *fast twitch* (FT). Sprinters must have more white muscle than red muscle or more than 50%.

According to (I Nyoman & I Made, 2015) Parts and stages in the 100 meter run are *start*, run and *finish*, all stages and parts receive serious attention as supporting factors for achievement. Each stage and part of the run requires different techniques, such as: 1) stage *Start*, which has specifications including quick reactions to cues/guns and active application of explosive power from the athlete's muscles to start running. 2) Running Stages, has technical specifications including maximizing the horizontal speed of two movements, namely support and kite movements. 3) The stage *finish*, the 100 meter run, has specifications including the speed of movement of the upper body and the coordination of upper and lower body movements.

The method can serve to be a tool in achieving a goal, (Hanif, 2011). While *method* is knowledge about the way or sequence of organizers carried out from beginning to end, and method is a way of implementation that has become a provision or certainty.

The word exercise comes from *practice* which means an activity to improve the skills (skills) of exercising by using various equipment according to the needs and branches of the sport. So that during the activity of the practice process, in order to master the movement skills of the sport, it is always assisted by using various supporting tools. (Giri, 2013)

The process of exercise is a process to be able to achieve a better level of one's ability in exercising which requires the right time and planning. The training process must be regular so that the training must be constant and continuous and is increasing, the training process is given from the simple to the complex and each exercise must have goals and objectives. (Giri, 2013)

Based on the statement above, it can be concluded that training is a process of improving skills (sports) carried out by students and athletes in a systematic, structured, repetitive, and continuous manner, and gradually from the form and load of the training.

(Ria, 2013) stated that in line with the above, good exercise is an exercise that is designed systematically by following the various characteristics of the sport, the availability of time and the athletes to be fostered. In Practice it is as closely related to the mind as it is to the body. The goal is to build body and mind and have confidence in the body's abilities.

The training method is a lesson to develop practice, where the word method is used for the condition of the activity material. Choosing and determining the method depends on the general goal, specific tasks, the specificity of a sport and the physical and mental maturity of the athlete and his level of ability (James, 2012).

The ability for progress that exists in athletes is determined by the training method that has been prepared by the coach based on the suitability of the method for the athlete. High achievement of an athlete will be easily achieved if able to apply the correct and quality training. These results are based on the treatment of several training factors that must be carried out by an athlete, the training factors include physical, technical, tactical and mental training, (Yunyun et al., 2008).

(Syafuddin, 2011) said that in achieving maximum performance in a sport, an athlete must be diligent and persistent in doing exercises. Because with focused training, it can be defined as systematic participation in training aimed at increasing one's physical functional capacity and exercise endurance. Exercise is the realization or implementation of the material or forms of training that have been planned in advance. The realization of these materials or forms of exercise is carried out repeatedly with increasingly difficult demands to improve physical and mental abilities.

According to (Johansyah, 2013) the main purpose of training is to improve the performance of athletes. To achieve *performance* as expected, the coach must pay attention to the principles of training. To start an exercise, you must start with a warm-up and end with a cool-down. The three main components of exercise are warm-up, core activity, and cool-down (cover).

The effect of exercise is very useful for sports fans such as: a) the effect of exercise can help the lungs work more carefully and efficiently, b) Enlarge the blood vessels and make the blood vessels more flexible and reduce the reaction to blood flow, c) Increase supply our blood, especially red blood cells and hemoglobin, d) Make body tissues healthier, supply them with more oxygen, e) Work wonders on our heart in building it into strong, healthy and relaxed muscles, f) Help us to increase appetite better and better at digesting and removing waste, g) Makes us feel happier, both mentally and emotionally, h) Is a preventive medicine, i) Can build a defense in our body against most diseases general.

Generally, the activity in the method of *speed play* giving the load lasts a long time. The length of the loading time depends on the reality (reality) of the length of the sport activity being carried out. The longer the time required by the sport, the longer it takes to load or exercise, and vice versa (Sukadiyanto & Dangsina, 2011).

According to (Irvan, Arifuddin Usman, 2005) said the method *speed play* or often called the speed play method, which distinguishes high- *speed play* intensity and low-intensity. *Speed play* is a form of running activity such as *Hollow sprint* which is done by walking, jogging, sprinting, and walking continuously. The principle of training *speed play* is to run with various variations.

Continuous training need not be at a constant pace but can vary within a given training session. Short bursts of high intensity exercise due to both anaerobic and aerobic glycolytic energy systems, longer periods of slower exercise induce adaptations especially in the aerobic system, increasing the disposal of lactic acid produced during high-intensity exercise.

So in this method *continuous* using a system *speed play*, where when running, runners play at a continuous speed without any rest by running as fast as possible and then jogging depending on the distance that has been determined and for the time that has been given by the coach.

In the movement *speed play* in running, they are constantly faced with situations where they have to anticipate, react and respond quickly to what will be done. The speed of movement in running is determined by the combination of cognitive (mental and intellectual) and motor (coordination and conditioning) skills that must work together in related situations. In addition to recognizing the importance of basic running speed, the ability to recognize a situation, assess and react appropriately must also be good.

This Exercise *speed play* is very necessary in doing running exercises where there is a phase where we run as fast as possible, with a predetermined distance then after arriving at a predetermined distance, the runner immediately starts jogging, in a predetermined direction, while regulating breathing so that it doesn't happen. significant fatigue. Then after reaching the predetermined distance in jogging, the runner immediately ran at maximum speed then jogged back and so on until the time and distance had been determined, in order to achieve what the training program had given.

In the training method *speed play* by using the form of running, swimming, or cycling and covering a long distance (far). For example, in the form of running, the method is continuous running, the

implementation of which is as follows: Athletes run for (eg 30 minutes) continuously, every 5 minutes stop 10 seconds to check heart rate, coach gives start and stop signals to calculate heart rate the heart, the athlete calculates by feeling the blood vessels in his neck, the calculation takes 6 seconds, the result is multiplied by 10 seconds. If the result is less than 140 times per minute the speed is increased, on the contrary if it is more than 160 times per minute it is slowed down, coaches and athletes always carry writing instruments to record the results of the exercise, before doing the exercise, the heart rate of the exercise must be known (Sukadiyanto & Dangsina, 2011).

Continuous exercise can be further defined by intensity training. Lower sustained training intensity is usually in the range of 70% to 80% VO<sub>2</sub>max for athletes, and 50% to 60% VO<sub>2</sub>max for those seeking health-related fitness. Lower intensity sustained exercise can be used in a variety of situations, including the development of health-related fitness for the average adult or during the start of the aerobic training season in many sports.

Indicates that lactate is formed continuously at rest or during light exercise. Normally, oxygen can provide energy for muscle contraction as long as the intensity of the exercise is low enough. If the intensity of muscle contraction is high, the body is unable to provide or break down oxygen fast enough to provide its immediate energy needs, resulting in the need to draw on anaerobic sources. However, under aerobic conditions, lactate is removed as quickly as it is formed, thereby stabilizing blood lactate levels.

Continuous practice resembles a bell curve. After a warm-up, a relatively constant level of exercise is maintained in the target training zone for a set period of time. Most group exercise programs usually use continuous training, (Aquatic, 2010).

## METHOD

Type of this research is experimental research with *one group pre test - post test design*. According to (Sugiyono, 2010) the experimental method is a research method that is used to look for the effect of *treatment* (treatment) against another particular in uncontrolled conditions. In this study, we did not use a comparison class, but used an initial test so that the magnitude of the effect or effect of running training can be known with certainty. In this study, the research subjects were first given a pre test to determine the extent of the students' initial abilities before being given the running training method. by using *speed play*. After being given the initial test, then the test was given treatment, namely by using the training method *speed play*. After finishing the exercise *speed play*, then all the testes were given a final test (*post test*) to find out how far the influence of the training method *speed play* on 100-meter running skills.

## RESULTS

That has been obtained and analyzed descriptively, then tested the hypothesis of the research that has been done. The hypotheses to be tested are: There is an effect of the training method *speed play* on 100 meter running skills. From the calculation results, it is known that the value of the correlation between the pre-test and post-test of the 100-meter run is obtained by the value of  $r_{count} = 0.89$  with the value of  $r_{table} = 0.423$  so that it is known that the KD value or contribution value is 79.21%, with the t test result being 8.82.

From the calculation results, it is known that the correlation value of the pre-test and post-test of speed play training on 100-meter running simultaneously is 0.0005. After the correlation number is obtained, then hypothesis testing is carried out with the following testing rules:

If  $r_{count} > r_{table}$  then significant

If  $r_{count} < r_{table}$  The table is not significant

Then it is found that  $r_{count} = 0.005$ . At a significant level of 5%, it was found that  $r_{table} = 0.89$ . thus  $r_{count} < r_{table}$  or  $0.423 < 0.89$ . This shows an increase so that there is an influence of the speed play training method on 100 meter running skills.

## DISCUSSION

The results showed that there was an effect of the training method *speed play* on 100 meter running skills, this was seen as an increase before being given treatment *speed play* and after being given treatment *speed play* where the increase was 79.21%.

Based on the process of the training method, the treatment of the training method *speed play* is that continuous training is carried out without rest involving longer duration exercises at lower intensity. For example, at the first meeting on training material, *speed play*, namely running 15 minutes continuously without rest, provided that the distance is 50 meters sprinting and 50 meters jogging. So for 15 minutes students circle the running track continuously without rest, where the length of the running track is 400 meters, so divided by 50 meters, then you get 8 posts along the 400 meter running track, provided that the first 50 meters run, then the second 50 meters jog, then The third 50 meters run again, then the fourth 50 meters jog again, and so on for 15 minutes.

The Training method *speed play* has advantages in performing the basic techniques of running 100 meters, including: 1) very efficient time, because there is no rest during exercise. 2) training heart and muscle endurance, 3) routines are easy to follow because from start to finish, the movement doesn't change, 4) there is less chance of injury due to low intensity, 5) adds a variety of speeds and durations.

However, exercises *speed play* also have drawbacks in doing 100 meters, including: (1 student may need higher intensity, so that students do not feel bored, 2) the exercise is monotonous, the exercise continues like that, 3) it may not be specific for some activities (eg, team sports), 4) require more time wasted during training, 5) increase the risk of injury due to lack of rest time during training.

Research (Loan Subarno, 2015) resulted in the exercise method *speed play* having a significant effect on increasing the speed of running *the sprint* 100 meter with  $t_{count} = 4.8$  greater than  $t_{table} = 2.26$  at the significance level = 0.05 and  $dk = 9$ . In accordance with the results of the study (Afrizal et al., 2016) concluded that there was a significant increase in achievement after being given training *Speed Play* at the Jakarta Young Indonesian Athlete Club, with an average deviation of MD = 0.53 standard deviation SD = 0.25 and standard error of mean = 0,09 these results produce a  $t_{table}$  at degrees of freedom ( $dk = n - 1 = 7$ ) with a significant level of 5% obtained

a critical value of t table = 2.365. Research (Loan Subarno, 2015) resulted in the exercise method *speed play* having a significant effect on increasing the speed of running *sprint* 100 meter with t count = 4.8 greater than t table = 2.26 at the significance level = 0.05 and dk = 9.

## CONCLUSION

Based on the results of the research that has been carried out, the following conclusions can be drawn: There is an effect of the training method *speed play* on 100 meter running skills with an increase of 79.21%.

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