The Effect of High Knee Running and High Knee Bounce Skips Exercises on Running Speed of 100 Meters of Athletic Extracurricular Participants in Senior High School

by Moh. Agung Setiabudi

The Effect of High Knee Running and High Knee Bounce Skips Exercises on Running Speed of 100 Meters of Athletic Extracurricular Participants in Senior High School

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Abstract---Field tennis is a small ball game that requires a field and the players need a racket with its own string specifications. Like the Wilson NXT brand strings on the Wilson Hyper Hamer 7.5 racket, which has its own tension when it will receive the ball. To find out the tension of the strings, it is necessary to do a test. The experiment was carried out on the Wilson Hyper Hamer 7.5 racket with Wilson NXT brand strings against the Wilson ball and Nassau ball bounce. This research is a quantitative descriptive in which the data are analyzed by performing normality test, homogeneity test, and hypothesis testing. The normality test carried out showed that the Wilson XT brand string tension on the Wilson Hyper Homer 7.5 racket against the Dunlop ball and Nassau ball bounce had a significance of 0.05 and was categorized as normal. For the homogeneity test, it can be seen that the results of the Dunlop ball and Nassau ball bounce have a sig value p (0.31) so that the data is homogeneous. From the results of the t-test is 8.133 and the t table is 2.31 with a p significance value of 0.611. This result shows that there is a significant difference. It can be concluded that there is a correlation between the influence of the

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Wilson NXT brand string tension on the Wilson Hyper Homer 7.5 racket on the rebound of the Dunlop ball and Nassau ball on tennis.

Introduction

Athletics is the parent of all sports, because all sports will involve activities in athletics. Running, jumping, and throwing activities (including starting) are basic movement patterns that characterize most sports (Febrianti, 2013). Athletics is a physical activity or physical exercise, containing natural and natural movements in accordance with what is carried out in our daily lives (Ilham, 2017). From the above opinion it can be concluded that athletics is a sport that can be associated with all sports.

Exercise is a process of change for the better, namely to improve the physical quality of the functional abilities of the body's equipment and the psychological quality of the trained children. According to Sukadiyanto (2005) in (Nugroho & Purnomo, 2019). Therefore, an athlete really needs exercise to increase his running speed. Speed training is very important to be given to short-distance runners, especially the 100-meter distance, because to be a champion in the short-distance race, maximum speed is needed in running, whoever is the fastest then he will win the race. To get a good speed, several training methods are needed (Rasyid, 2013).

The training methods to increase speed in the 100-meter distance run are: 1) Heel kicks touching the lower buttocks (Butt Kicks) stepping by kicking the heel backwards until it touches the lower buttocks. The supporting leg is fully straightened from the toe at the same time as the other leg is kicking the heel to the back of the buttocks. Both arms are bent at an elbow angle of 90 degrees, swinging to balance the movement of the foot (Rakhmawati, 2017) running with high knee lift (High Knee Running) Run by lifting the quadriceps firmly until the position of the average water. Both arms are bent at an angle of 90 degrees. The supporting leg is fully straightened from the toe at the same time as lifting the opposite knee (Nugroho & Purnomo, 2019). According to Waluyo & Rahayu (2012), the deer jump exercise is an exercise to jump forward or up with one leg alternately and repeatedly which is useful for increasing leg power and acceleration.

High knee bounce skips is an exercise to jump forward or up with one leg alternately and repeatedly which is useful for increasing leg power and running acceleration according to Gerry (2003). Meanwhile, according to Rakhmawati (2017), high knee bounce skips are jumping forward by lifting the high heel on the different leg in front, then the back leg is straight. The swing of the hand compensates for the movement of the legs, alternately between the legs.

High knee running is a movement that increases the fitness of the thigh muscles, increases heart rate, and helps burn more calories (Apriansyah, 2013). Both arms are bent at an angle of 90 degrees. The supporting leg is fully straightened from

the toe at the same time as lifting the opposite knee Rakhmawati (2017). Some of the numbers in athletics, especially the sprint number, are the sports that are most interested in as evidenced by the large number of sprint runners in this Senior High School Bima Ambulu athletics extracurricular. From the observations made, it was found that the speed of the 100 meter running athlete at Senior High School Bima Ambulu was still lacking. Of the 15 extracurricular athletes, the overall average speed achieved was 14 seconds.

While the ideal time for a 100-meter run is 13 seconds (Wiarto, 2013), towards the idea or idea to improve the 100-meter run, the researchers provide training methods and methods to increase the 100-meter running speed with Butt kicker, High knee running, and High knee bounce exercises (Westerdahl et al., 2005; Lizier et al., 2012). Skips that are expected to be able to increase his running speed. Therefore, the author wants to conduct a study entitled "The effect of high knee running and high knee bounce skips on running speed 100 for high school students (Alvarez-Buylla & Lim, 2004; Wang et al., 2009).

Method

A research can be successful well and in accordance with scientific procedures if the research uses the right method or tool (Antin et al., 2015; Bassnett, 1993; Richardson, 2018; Porter et al., 2016; Brinkman-Kealey, 2012). This research is an experimental study using a one-group pretest-posttest design by dividing into two groups, one group being treated with high knee running exercises and the second group being treated with high knee bounce skips. Because the purpose of this study was to determine the student's ability to run 100 meters in athletics. Research respondents involved all athletic extracurricular participants at Senior High School Bima Ambulu to complete the formulated hypothesis. The population used in this study were all athletic extracurricular participants at Senior High School Bima Ambulu totaling 15 students aged 16 years. In this study, the sample selection technique used was total sampling. Total sampling is a sampling technique where the number of samples is the same as the population. According to Sugiyono (2010), the reason for using the total sampling technique is because the total population is less than 100 so that all samples are used. In this study, taking samples with the criteria of active students in athletic training who attend Senior High School Bima Ambulu. The data taken will be analyzed using normality test, homogeneity test, and T- test (Uddin et al., 2008; Qian et al., 2010).

Discussion

Running sports, especially short distance running or sprints, need to be trained regularly and continuously in order to produce increased time performance. In this study, exercises were carried out with the aim of increasing the speed of the 100-meter sprint for athletic extracurricular participants at Senior High School Bima Ambulu through running exercises that the researchers had prepared. Participants are trained to perform an exercise program in the form of high knee running and high knee bounce skips to improve their running so as to provide good benefits for those who do it. The benefit of the exercise in this study was to determine the extent of the 100-meter running level, so that participants could be

encouraged to improve their abilities. Indirectly, with athletes doing various kinds of movement exercises, it can be an additional improvement in terms of technique and hand and foot coordination, so that when in real competition, improvements both in technique, body position, hand swing, steps, and coordination will be better. and will be able to create better time performance results.

From the results of data analysis, it was shown that the athletic extracurricular participants of Senior High School Bima Ambulu who participated in high knee running and high knee bounce skips for 16 meetings experienced an increase in their 100 meter sprint performance. The increase in the 100-meter run actually did the exercise, the athletic extracurricular participants at Senior High School Bima Ambulu who received high knee running and high knee bounce skip training for 16 meetings experienced an increase in sprint running performance after the treatment.

After doing research, it turns out that there are several factors that support the increase in the achievement of the 100 meter sprint for athletic extracurricular participants at Senior High School Bima Ambulu, including factors from the infrastructure used for training, namely on the grass field, by practicing on the grass the athlete will be more comfortable when carrying out given exercise program and can minimize the occurrence of injury.

The training is carried out through pretest and posttest, this is done to determine the improvement that occurs in students who are in training. The following is Figure 1 of the results of the pretest and posttest results of the 100 meter high knee running group.
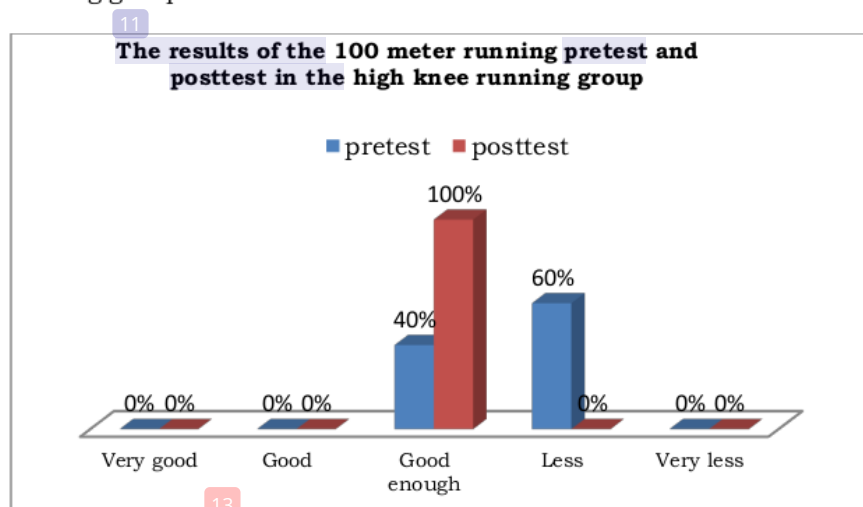

Figure 1. Diagram of the results of the high knee running pretest and posttest in the 100 meter run

Of the 5 participants who previously received back-running treatment, 2 participants received the "enough" category and 3 participants received the "less" category. And after getting treatment for back running training, there were 5 participants who got the "enough" category. In addition, the normality test was

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also carried out to determine whether the data were normally distributed or not. The normality test was carried out at the pretest and posttest in the back run (Bear & Knobe, 2017; Schmidt & Finan, 2018). The results obtained are in the pretest running behind the Sig (2-sided test) is 0.849 and the posttest is obtained Sig (2-sided test) is 0.987. It can be concluded that the results of the pre-test and post-test of students with high knee running treatment were normally distributed because the value of Sig. (P-value) is greater than (0.05). The homogeneity test shows that Sig (P-value) is 0.918, which means that all the data taken are homogeneous because they have a value greater than 0.05.

The results of the high knee running exercise show that the data analysis of the t-test data value of sig 2-tailed < from the p-value (0.05) so that it can be concluded that there is an effect of rear running training on the running speed of the extracurricular students of Senior High School Bima Ambulu. Back running exercise according to Giartama (2018), is a running movement by scraping the soles of the feet quickly so that the heels touch the buttocks, this is to accelerate the movement of the feet from a position behind to a front position, strengthening the footprints when scraping while running. The back running exercise is also very pronounced in the back thigh muscles (Widana et al., 2021). This statement is supported by Mintari & Indriani (2017), the hamstring muscle is a muscle group in the thigh joint which is located on the back of the thigh, functions as a knee flexion movement, hip extension, as well as external and internal hip rotation movements (Livingston, 2004; Bridge & Sawilowsky, 1999).

In the high knee bounce skips exercise, it is carried out on 5 athletic participants where they will be tested pretest and posttest. Of the 5 participants who before receiving the high knee bounce skip exercise treatment, 40% (2 participants) got the "enough" category, 60% (3 participants) got the "less" category. And after receiving the high knee bounce skip exercise treatment, 100% (5 participants) got the "enough" category, previously among them there were 3 participants in the "less" category. For more clarity, look at Figure 2.

The results of the pretest and posttest of the 100 meter high knee bounce skips group
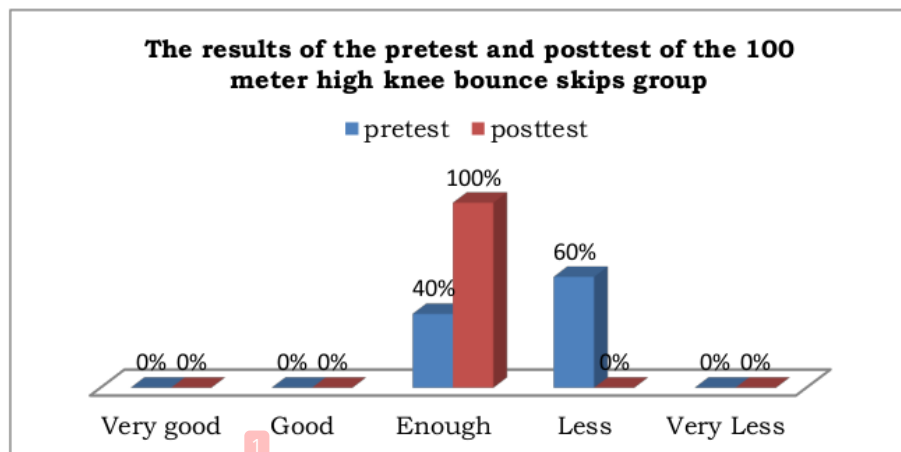
■ pretest ■ posttest

Figure 2. Diagram of the results of the pretest and posttest high knee bounce skips in a 100 meter run

From the results obtained in the pretest and posttest, then the normality test, homogeneity test, and T-test will be carried out as in the back running exercise. For the normality test, the results were 0.894 for the pretest and 0.919 for the posttest. It can be seen that the pre-test and post-test results of students treated with high knee bounce skips were normally distributed because the value of Sig (2-sided test) was greater than the value of (0.05). Meanwhile, the homogeneity test shows Sig (P-value) is 0.918, which means that all the data taken are homogeneous because they have a value greater than 0.05.

The results of the t-test data analysis showed that the 2-tailed sig value < from the p-value (0.05) it can be concluded that there is an effect of high knee bounce skip exercise on the 100 meter running speed of extracurricular students at Senior High School Bima Ambulu. Supported by research Rakhmawati (2017), which states Lifting the knee high until the average water is followed by jumping far forward. While the other leg is straight, slightly backward movement offsets the movement of the foot that steps forward. This exercise is to develop leg and hip power. Especially the flexor work and extensors of the thighs and hips, this exercise is used to improve running and sprinting movements (Julfikar et al., 2017).

Conclusion

From the results of the research that has been obtained and the discussion, it can be concluded that there is a correlation in high knee running exercise to the speed of running 100 meters in the athletic extracurricular participants of Senior High School of Bima Ambulu Jember students with a Sig (2-tailed) value of 0.001 which is smaller than 0.005. And there is a correlation between the high knee bounce skips exercise and the speed of 100 meters in the Senior High School of Bima Ambulu Jember extracurricular participants with a Sig (2-tailed) value of 0.002, which is smaller than 0.005.

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