

Analysis Of Kinesthetic Perception And Archery Accuracy In Indonesian Archery Association Of Aceh Athletes Toward Papua National Sports Week

Dhia Rahmat¹, Razali^{2*}, Syamsulrizal³, Zulfikar⁴, Iskandar Hasanuddin⁵

¹Syiah Kuala University, Banda Aceh, Indonesia

²Syiah Kuala University, Banda Aceh, Indonesia

³Syiah Kuala University, Banda Aceh, Indonesia

⁴Syiah Kuala University, Banda Aceh, Indonesia

⁵Universitas Syiah Kuala, Banda Aceh, Indonesia

Abstract: Physical condition is one important aspect that helps players to develop techniques, tactics, strategy and mentality to play basketball. If the physical condition of the basketball player is good, then the technical aspects, tactics, strategy and mentality of playing will also be good. However, ineffective physical training for basketball players at senior high school 1 Langsa City causes the physical condition of basketball players to be in the low category, even though good physical conditions are absolutely needed by basketball players to develop techniques, tactics, mentality, and strategy when competing. The purpose of this study was to determine whether there was an effect of circuit training on improving the physical condition of basketball players at senior high school Langsa City. This research is a quasi-experimental research using one group pretest-posttest design research method. The research subjects used a total sampling technique of 15 people. The instrument used was a 20-meter running test, medicine ball test, vertical jump test, t-test test, 2400 meter running test. Data analysis techniques used t-test at a significant level of 5%. The results of the study of the influence of circuit training exercises on improving the dominant physical condition of the basketball players of senior high school 1 Langsa City were obtained t count (6.956) > t table (1.771), and p value < 0.05. These results mean that the hypothesis is accepted, so the hypothesis states, there is an influence of circuit training exercises on improving the dominant physical condition of basketball players in senior high school Langsa City. It is recommended that basketball players in Langsa City High School 1 in order to be able to practice regularly with regular training methods and need to maintain and improve physical condition.

Keywords: Circuit Training, Physical Conditions.

Date of Submission: 26-06-2020

Date of Acceptance: 15-07-2020

I. Introduction

Basketball is one of the popular sports in the community, this type of sport involves many people, although basketball was found as an indoor sport, but now basketball can be played indoors and outdoors. According to Agus (2008: 10) that basketball is a fairly simple game, which is a game between two teams where each team throws the ball at each other in the ring or basket of the opposing team to score or get a score (score). So far the development of basketball has progressed very rapidly, especially in the Aceh region. This can be seen from the hectic championship held at the POPDA and PORA levels.

The development of basketball in Aceh is so fast, including one of them in senior high school 1 Langsa City. This can be seen from one of the always crowded basketball competition held, both between schools and between clubs, such as the Regional Student Sports Week (POPDA), middle and high school.

Fostering and developing national sports that can guarantee equitable access to sports, Law No. 3 of 2005 concerning the National Sports System Articles 6 and 75 mandate that every citizen without exception has the right to get facilitation for his involvement in sports activities.

The development of sports, sports coaching is a very important factor in achieving a highest achievement, therefore whether or not the world of sports develops depends on the coaching of sport itself, both coaching in the community, school, and at the regional, national, and even international level. Sports achievement itself is a measure of the success of fostering a sport that is well developed or fostered. Sports achievement coaching is not only in a sports club, basketball sports coaching in Langsa City Senior High School 1 also plays an important role with extracurricular activities in schools.

Given the basketball game, including the type of sport that relies heavily on physical abilities. The physical condition of the player is very important in playing basketball, which means that in an effort to improve

physical conditions all of these components must be developed. The importance of the physical condition must be realized by the coach and of course by the player himself, the aim is to find out early on whether a player's physical condition will be able to hinder performance or appearance in competition. In addition, what is far more important is through basketball, players are expected to be able to work productively and efficiently and to achieve optimally because they are supported by the physical conditions they have.

Activities carried out by basketball players from Langsa City Senior High School 1 both in training and competing, players must have good physical condition and be trained. However the activities carried out by players, then there are elements or components that must be considered are elements of physical condition. Players who have good physical condition, then these players can perform various activities without experiencing significant fatigue. Therefore this physical condition is the most important element in every movement or activity carried out by the player. Without a physical condition on the player's body, the player cannot perform sports activities to the maximum.

Improving the quality of players a lot of components that support, this shows that the components of physical conditions such as balance, strength, speed, endurance and flexibility are not yet known. In fact, on the field, the physical condition level of the players of Senior High School 1 Kota Langsa is unknown between players and those who the other. According to Sugiyanto (1996: 38), physical ability is the ability to function organs in physical activity. Physical ability is very important to support developing psychomotor activities. Skillful movements can be carried out if the physical abilities are adequate.

Physical condition can reach an optimal point if the exercise starts at an early age and is carried out continuously. Physical condition is the physical condition of a person at a certain time to do a job that is used as a burden. Physical condition is one of the prerequisites indispensable in any attempt to improve the performance of a player, it is even said to be the basis of the starting point of a sports achievement start.

In general, the physical conditions required in each sport are the same, meaning that each branch of sport requires physical conditions in an effort to achieve optimal performance, as well as in basketball. A player can be said to be in a state of good physical condition, if he is able to carry out activities that are charged to him or what he does without excessive fatigue. Physical condition plays a very important role in maintaining or increasing the level of physical fitness. If the level of physical condition of a player is in good condition then for the application of techniques and tactics in the game will be mastered and the movements carried out effectively and efficiently.

Sarumpet (2003: 24) physical condition is the physical condition of a person at a certain time to do something that is a burden. A person can be said to be in good physical condition if he is able to do the work that is charged to him or he wants to do without excessive fatigue. The elements of physical condition are strength (strength), speed (speed), endurance (endurance), and skill (skill / agility).

Physical condition training must be organized, designed and carried out properly and systematically so that it can improve physical fitness and increase the biomotoric abilities needed. Biomotor components consist of: Strength, Endurance, Speed, Determination, and Coordination (Rusli, 2000: 62). According to Prawira in Prihanto (2016: 5) that elements of the dominant physical condition in basketball are aerobic endurance, arm muscle explosive power, speed, agility and leg muscle explosive power.

Given the limited training time that only lasts two hours in one meeting each week, it is not possible for players to develop their talents or talents to be better including improving the physical condition of the player, the coach proposes additional training hours to the Head of Senior High School 1 Langsa City to provide a training policy additional extracurricular hours. One of them sports games including basketball. The basketball training in Langsa City Senior High School 1 runs according to schedule. With practice three times a week, where one meeting emphasizes technique, the second meeting emphasizes tactics and the next meeting emphasizes physical. Physical training that is applied to basketball players at Senior High School 1 Langsa only once a week cannot improve good physical quality in achieving performance.

Based on the results of observations and observations can be described that the forms of circuit training must be reviewed directly knowing the effectiveness of the effect of circuit training on the physical condition of the player. then based on the above the researcher wants to conduct a research on the Effect of Circuit Training Method on the Improvement of the dominant Physical Conditions of the Basketball Players of Senior High School 1 Langsa City in 2019.

II. Research Methods

The research method used in this study is an experimental method. This method was chosen to find out certain symptoms through the treatments imposed on the experimental sample. As Sudjana, (1989: 109) explains "factorial experiments are experiments that almost or all levels of a factor are combined or crossed with all other levels that exist in that experiment".

Observations made during the course of the experiment that is observing the effects arising from the treatment (treatment) imposed on the experimental sample. For research activities that use the field experiment method, the design can consist of several types, depending on how many variables will be examined.

Based on the research approach above, in order to give meaning to research data effectively and efficiently, the study chose the one group pretest posttest design. Notoadmodjo (2002: 56) in this design does not have a comparison (control), but at least the first observation (pretest) has been made that allows to test changes that occur after the existence of the experiment (program).

The research method used in this study is an experimental method. This method was chosen to find out certain symptoms through the treatments imposed on the experimental sample. As Sudjana, (1989: 109) explains "factorial experiments are experiments that almost or all levels of a factor are combined or crossed with all other levels that exist in that experiment".

Observations made during the course of the experiment that is observing the effects arising from the treatment (treatment) imposed on the experimental sample. For research activities that use the field experiment method, the design can consist of several types, depending on how many variables will be examined.

Based on the research approach above, in order to give meaning to research data effectively and efficiently, the study chose the one group pretest posttest design. Notoadmodjo (2002: 56) in this design does not have a comparison (control), but at least the first observation (pretest) has been made that allows to test changes that occur after the existence of the experiment (program).

III. Research Results And Discussion

1. Research Results

Based on the overall results of the implementation of the dominant physical condition, which consists of; (1) 20 meters running test data, (2) medicine ball test data, (3) upright jump test data, (4) t-test data, and (5) 2400 meters running test data. So the raw data has been obtained in quantitative form in the form of a score that illustrates the level of dominant physical condition in the basketball players of Senior High School Langsa City. The data is divided into two groups, namely before and after conducting circuit training in a predetermined time. In managing this data, aside from being calculated manually, SPSS computer software is also used, which aims to prove the accuracy of the data obtained. The steps taken are looking for the average value (mean), standard deviation, normality test, homogeneity test, and just do the average difference test.

The data from the two groups of physical condition levels are dominant in the Langsa City 1 High School players that the average value of the physical condition for the whole player shows the numbers for each test item as follows: run 20 meters an average value of 3.37 seconds. Medicine ball an average value of 4.38 meters. Jump upright average value of 45.4 cm. T-test the average value of 10.25 seconds. Running 2400 meters an average value of 13.68 minutes.

The above shows that the average physical condition for the whole player shows the numbers for each test item as follows: Run 20 meters with an average value of 3.20 seconds. Medicine ball an average value of 4.62 meters. Jump upright average value of 48.26 cm. T-test the average value of 10.08 seconds. Running 2400 meters the average value of 12.85 minutes.

2. Data Analysis

Overall description of the pretest and posttest scores of the two groups of players before treatment and after treatment. In the details of the 20m running test, medicine ball, upright jump, t-test, and 2400 m running can be seen in the SPSS printout below. The data normality test conducted in this study is the Kolmogorov-Smirnov test in order to see whether the data in the results of this study are normally distributed. This test will be operated with SPSS version 16.00 if the significance value > 0.05 then the data is normally distributed, conversely if the significance value < 0.05 then the data is normally distributed Santoso, (2002: 36). Based on the normality test, that the significant values for both pretest and posttest data groups are 0.219 and 0.199, so it can be explained that the two significant values are greater than 0.05, it can be interpreted that the two groups of data obtained in this study were normally distributed.

In the homogeneity test the criteria used to determine whether a test is homogeneous is if $p > 0.05$ and $F_{hit} < F_{table}$ the test table is declared homogeneous, if $p < 0.05$ and F is homogeneous. Based on the data above, it is known that the dominant physical condition of the basketball players of SMA Negeri 1 Kota Langsa obtained p values $(0.620) > 0.05$ and F arithmetic $(0.249) < F_{table}$ (4.41). It can be concluded that the variances above are homogeneous.

T test was conducted to determine whether there was an effect of circuit training exercises on improving the dominant physical condition of basketball players in Senior High School Langsa City. Based on the t test results obtained t value $(6.956) > t_{table}$ (1.771), and p value < 0.05 . These results interpreted as H_0 accepted, so the hypothesis states there is an influence of circuit training exercises on improving the dominant

condition of basketball players in SMA Negeri 1 Kota Langsa. The results of the t test for each component of the dominant physical condition are as follows:

1. Analysis of a 20 meters run

a. Normality test results run 20 meters

Based on the results of the normality test that the significant values for the two dominant physical condition group data are 0.343 and 0.245, so it can be explained that the two significant values are greater than 0.05, it can be interpreted that the two data groups obtained in this study are normally distributed.

b. Homogeneity Test Results Runs 20 meters

Based on the Homogeneity test that the significant value on the 20 m running data is 0.720 so that this figure can be explained greater than 0.05, so it can be interpreted that the dominant physical condition in the basketball player overall data in this study are homogeneous, or have the same variance.

c. Different test average data of pretest and posttest run 20 meters

Based on the average difference test t count of 4.376 while the value of t table at the level of eligibility of 95% (df = 15-2) shows a figure of 1,771. so the value of t arithmetic (4.376) > t table (1.771), p value <of 0.05. so that it can be interpreted that there is a significant difference (real) between the two groups of data, namely the pretest and posttest on the 20 meter running test so that the hypothesis is accepted.

2. Analysis of the medicine ball test

a. Normal ball medicine test results

Based on the normality test that the significant values for the two dominant physical condition group data are 0.233 and 0.189 so it can be explained that the two significant values are greater than 0.05, it can be interpreted that the two data groups obtained in this study are normally distributed.

b. Homogeneity test results of medicine ball tests

Based on the homogeneity test the significant value in medicine ball data is 0.830, so it can be explained that this figure is greater than 0.05, so it can be interpreted that the dominant physical condition in basketball players overall data in this study are homogeneous, or have the same variance.

c. Different test average pretest and posttest medicine ball test

Based on the difference test the average t count was 4.940 while the value of t table at the 95% feasibility level (df = 15-2) showed a figure of 1,771. so the value of t arithmetic (4.940) > t table (1.771), p value <of 0.05. so that it can be interpreted that there is a significant difference (real) between the two groups of data, namely the pretest and posttest on the medical ball test so that the hypothesis is accepted.

3. Analysis of the vertical jump test

a. Test the normality of the upright jump test

Based on the normality test that the significant values for both the vertical jump group data are 0.214 and 0.179, so it can be explained that the two significant values are greater than 0.05, it can be interpreted that the two data groups obtained in this study are normally distributed.

b. Homogeneity test results upright jump test

Based on the homogeneity test that the significant value in the upright jump data is 0.612, so this figure can be explained greater than 0.05, so it can be interpreted that the upright jump in basketball players overall data in this study are homogeneous, or have the same variance.

c. Difference test of average of pretest and posttest jump test

Based on the average difference test t count of 4.104 while the value of t table at the level of eligibility of 95% (df = 15-2) shows a figure of 1,771. so the value of t arithmetic (4.104) > t table (1.771), p value <of 0.05. so that it can be interpreted that there is a significant difference (real) between the two groups of data, namely the pretest and posttest in the upright jump test so that the hypothesis is accepted.

4. T-test analysis

a. T-test normality test

Based on the normality test that the significant values for both t-test group data are 0.173 and 0.170, so it can be explained that the two significant values are greater than 0.05, it can be interpreted that the two data groups obtained in this study were normally distributed.

b. Homogeneity test t-test

Based on the homogeneity test that the significant value in the t-test data is 0.862, so that this figure can be explained greater than 0.05, so it can be interpreted that the dominant physical condition in the basketball players overall data in this study are homogeneous, or have the same variance.

c. Different test of pretest and posttest t-test data

Based on the average difference test t count of 4.347 while the value of t table at the level of eligibility of 95% (df = 15-2) shows a figure of 1,771. so the value of t arithmetic (4.347) > t table (1.771), p value <of 0.05. so that it can be interpreted that there is a significant difference (real) between the two groups of data, namely the pretest and posttest on the t-test so that the hypothesis is accepted.

5. 2400 m running test analysis

a. Test normality test run 2400 m

Based on the normality test that the significant values for both data run 2400 m, namely 0.138 and 0.166, so it can be explained that the two significant values are greater than 0.05, it can be interpreted that the two data groups obtained in this study were normally distributed.

b. Homogeneity test run test 2400 m

Based on the homogeneity test that the significant value of 2400 m running data is 0.626, so that this figure can be explained greater than 0.05, so it can be interpreted that the dominant physical condition in the basketball player overall data in this study are homogeneous, or have the same variance.

c. The average difference test data of the pretest and posttest run test is 2400 m

Based on the average difference test t count of 6.542 while the value of t table at the level of eligibility of 95% (df = 15-2) shows a figure of 1,771. so the value of t arithmetic (6.542) > t table (1.771), p value <of 0.05. so that it can be interpreted that there is a significant difference (real) between the two groups of data, namely the pretest and posttest on the 2400 meter running test so that the hypothesis is accepted.

6. Calculation of increasing mean (mean)

An increase in the average value (mean) of the dominant physical conditions in the basketball players of Senior High School 1 Langsa City receiving circuit training can be seen in the table below;

Table 4.1. Increasing the mean value of the physical conditions in the basketball players in Langsa City High School 1

ominant Physical Condition	N	Mean Pretest	Mean Posttest	Enhancement
20 meters	15	3,37	3,20	0,17
medicine	15	4,38	4,62	0,24
ht jump	15	45,40	48,26	2,86
t	15	10,25	10,08	0,55
2400 meters	15	13,68	12,85	0,83

Based on the table above, it can be seen that the increase in the mean physical condition is dominant in basketball players in Langsa City 1 High School, after receiving circuit training treatment shows an increase in the 20 meter running test items by 0.17, medicine ball by 0.24, upright jump by 2, 86, t test amounted to 0.55, and running 2400 m amounted to 0.83 thus it can be said that there was an increase in the mean of the dominant physical condition after the basketball players of Senior High School 1 Langsa City did circuit training.

IV. Discussion

Based on the results of research on circuit training methods on the dominant physical condition of basketball players in Langsa City High School 1, which consists of five test items. Measurement of the dominant physical condition in basketball players performed 20-meter running tests, medicine ball tests, upright jump tests, t-tests and 2400 meters running.

The purpose of the initial test (pretest) is to determine the physical condition of the player before being given treatment. After the initial tests (pretest) players are treated with circuit training for 1.5 months or 6 weeks. According to Muhajir (2007: 58), said that "circuit training is a sequence of exercises with one type of activity in each post between 4-12 posts". So, the treatment given is in the form of circuit training methods (circuit training) of 5 posts. The training given is: post I (squat thrust), post II (medicine ball), post III (squat Jump), post IV (goal jump) and post V (run 2.4 km). After the treatment is given, the player performs a final test (post-test) to determine changes or effects on the physical condition of the basketball players of Senior High School 1 Langsa City.

Based on the t test results obtained t value (6.956) > t table (1.771), and p value <of 0.05. These results mean that the hypothesis is accepted, so that the hypothesis states that there is an influence of circuit training on improving the dominant physical condition of basketball players in Senior High School 1 Langsa City.

According to Sugiyono (1996: 221) said that "physical ability is the ability to function bodily organs in physical activity. Physical ability is very important to support developing physical activity. Physical ability is very important to support the development of psychomotor activities. Skillful movements can be carried out if the physical abilities are adequate. Like the players who need a good physical condition, especially to compete. The level of the physical condition of the player can be achieved if the method of physical training is carried out regularly and directed, as well as continuously, so that the built up elements of physical conditions such as endurance, agility, speed, power, to obtain achievements. Physical ability is one of the most dominant components in sporting achievement. Sports achievements will not be separated from the elements of tactics, techniques and the quality of physical conditions. A player really needs quality strength, endurance, flexibility,

speed, agility, and good motion coordination. These aspects are needed to be able to move and react well during the match.

This research is only limited to proving the theories that have been put forward by experts, however this research is expected to be a meaningful input for the development of science. The results of this study can be said to be significant and lead to conformity, but the authors are aware of other factors that influence in this study. Not only physical conditions, but there are influences of other factors, such as food, lifestyle and the coach directing the methods used in situations and conditions when training basketball players in Langsa City High School 1 in the future.

V. Conclusion

Based on the analysis of the results and discussion, it can be concluded that there is a significant influence on the provision of circuit training to improve the dominant physical condition of basketball players in Senior High School 1 Langsa City. Based on the t test results obtained t value (6.956) > t table (1.771), and p value < 0.05. These results mean that the hypothesis is accepted, so that the hypothesis states that there is an effect of the exercise on the physical condition of the circuit training model on improving the dominant physical condition of the basketball players in Senior High School 1 Langsa City. From the results of the increase in the mean physical condition of the dominant in the basketball player of Senior High School 1 Langsa City, after getting the circuit training treatment showed an increase in the 20 meters running test items by 0.28, the medicine ball by 0.11, the upright jump by 2.86, the t test by 0.55, and running 2400 m by 0.83 thus it can be said that there was an increase in the mean physical condition dominant after the basketball players in Langsa City High School 1 conducted circuit training.

References

- [1]. Barth K dan Boesing L. 2010. *Training Basketball*. UK. Mayer & Mayer Sport.
- [2]. Furqon. (1995). "*Teori Umum Latihan*". Surakarta: Sebelas Maret University Press.
- [3]. Lutan, rusli. 2000. *Dasar-dasar kepelatihan*. Jakarta: Depdikbud.
- [4]. Nuril, Ahmadi. 2007. *Permainan Bola Basket*. Surakarta: Era intermedia.
- [5]. Pekik Irianto, Djoko. (2002). "*DasarKepelatihan*". Yogyakarta: UNY.
- [6]. Sajoto. (1988). *Pembinaan Kondisi fisik dalam olahraga*. Jakarta: Depdikbud.
- [7]. Sajoto, M. (1988). *Pembinaan Kondisi Fisik Dalam Olahraga*. Jakarta: Departemen Pendidikan dan Kebudayaan.
- [8]. Sajoto, M. (1999). "*Peningkatan dan Pembinaan Kekuatan Kondisi Fisik dalam Olahraga*". Jakarta: Dahara Prize.
- [9]. Sudijono, Anas. (2006). "*Pengantar Statistik Pendidikan*". Jakarta: PT Raja Grafindo Persada.
- [10]. Sugiyono. (2009). "*Statistik untuk Penelitian*". Bandung: Alfabeta.
- [11]. Suharsimi, Arikunto. 2010. *Prosedur Penelitian Suatu Pendekatan Praktek*. Jakarta: RinekaCipta.
- [12]. Tudor, Bompa O. 2003. *Periodzation Training for sport*. United State; HumasKinetics.
- [13]. Tudor, Bompa O. 1994. *Terjemahan BukuTheory And Methodology Of Training*. Surabaya

Dhia Rahmat, et. al. " Analysis Of Kinesthetic Perception And Archery Accuracy In Indonesian Archery Association Of Aceh Athletes Toward Papua National Sports Week." *IOSR Journal of Sports and Physical Education (IOSR-JSPE)*, 7(3) (2020): 29-34.