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# The Effect of Ball Training Setter On Passing Accuracy of Female Volleyball Athletes of Untad Club

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## ABSTRACT

This study aims to determine whether there is an effect of the training setter ball on the accuracy of the upper pass of the Untad women's volleyball club athletes. This type of research is an experimental study because the aim is to see the effects of a treatment. The sample in this study was some volleyball players in the Untad women's volleyball club athletes as many as 12 people. The results of this study indicate that the average value before being given the training setter ball training was 59.83, and after being given the training setter ball training, 72.17, so that there was an increase of 12.33. Based on the results of the test sample calculation where t count = 58.71 while t table at the 5% level with degrees of freedom (db) = n-1 = 11 is 1.796 so it can be concluded that H0 is rejected and Ha is accepted because the t count value is greater than t table, which is 58.71> 1.796. The results of the study indicate that there is an effect of the training setter ball on the accuracy of the upper pass of the Untad women's volleyball club athletes.

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A. Conception and design of the study;
B. Acquisition of data;
C. Analysis and interpretation of data;
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## INTRODUCTION

Sport is any form of physical activity that is done to improve physical fitness, skills, and health. In addition, sport can also be used as a means for recreation, entertainment, or competition. Sports activities can involve body movements, either individually or in groups, with certain rules and goals, such as developing strength, agility, endurance, or coordination. One example is volleyball.

Volleyball is a game played by two teams, each team consisting of 6 players, played using a ball that is bounced from one player to another utilising passing, which ends with a smash towards the opponent's area. And the two teams are separated by a net with different heights for both men and women (PBVSI, 2021). Some of the basic skills needed in volleyball are serving, passing, smashing, and blocking. According to (Pratiwi et al., 2020), volleyball is a game that is played by bouncing the ball using all parts of the hand

to be played on the playing field itself three times. Volleyball is a sport that is developing very rapidly in Indonesia, both in schools, government agencies, private institutions, universities and in the public environment. This is because volleyball requires simple equipment. Volleyball can be played by all levels of society, from children to adults, men and women, both people in cities and people in villages (Ismail & Tunggul, 2020).

The development of the world of sports, especially volleyball, is currently experiencing very rapid progress. This is proven by the existence of many events held both regionally, nationally, regionally, and internationally. In Indonesia, volleyball is developing very rapidly, this is proven by the many regular volleyball competitions held every year, which aim to find potential players who will later become national players. These competitions include national championships between clubs, the Indonesian volleyball league (Livoli), the professional volleyball league (Proliga) and so on. In addition to the competitions held regularly, there are also tournaments carried out by clubs, volleyball schools, and public schools. The nurseries are carried out to form athlete regeneration and also to improve and achieve the highest achievements.

Indonesia has a volleyball organization called PBVSI, and in every region of the archipelago, there is a volleyball sports community. Volleyball is not just a sport, but also has the right techniques and ways to do it. One position that plays a very important role in volleyball is the setter. The setter is a player whose job is to give or pass the ball to his friends so that they can make attacks and features of the game (Putro et al., 2020). A setter must be able to master the basic techniques of volleyball, namely the upper technique and the lower technique. The setter himself has an important role in providing bait to the smash player to be hit into the opponent's camp to produce points.

Volleyball is a modern sport and is developing quite rapidly in the world, a team game played by two teams of 6 people each and separated by a net Payoga et al., 2019). According to (Panjaitan & Wahyudi, 2020), volleyball is a game played by two teams separated by a net. The game uses hands by bouncing. The goal of the volleyball game is to keep the ball from falling in your field area, and the ball can pass over the net to the opponent's field area (Setyawan, 2017).

In addition to serving the ball to his teammates, the setter also has the biggest role, namely acting as an attack organizer in volleyball (Rusu, 2017). In achieving a victory, a setter has a very big influence when playing through the quality of the pass given, and the intelligence he has can lead his team to victory (Novitasari & Rahfiludin, 2016). In addition, some setters do not know the types of attack variations, so they do not match the desired ball variation spike (Abidin, 2022).

Obstacles that often occur when doing overhead passes often occur double when the setter does an overhead pass, which will reduce the setter's ability to do overhead passes, so that the target is not right when giving a pass to the spiker, which will result in less stability when doing a smash attack, as well as dangerous obstacles in doing overhead passes, the fingers often get injured because the position of taking the ball is not right. This injury often occurs due to a lack of practice time and rarely doing exercises to train the strength of the fingers.

Players who have specialized as a setter must receive a special portion of training to master the upper pass technique well, because the percentage of the use of the upper pass technique performed by the setter is greater and more dominant. A setter/feeder must have strong arm muscles and balance so that he is able to perform a good, precise and directed upper pass (Prasetyo, 2015).

## METHODS

This study uses a quantitative method of research method. This research is experimental. According to Isman (2020), experimental research is the only research method that is considered the most appropriate for testing hypotheses regarding causal relationships. This type of research is an experimental research that aims to determine the effect of the training setter ball on the accuracy of the passing of female Untad volleyball athletes. According to (Sugiyono 2017). The experimental research method can be interpreted as a method used to find the effect of certain treatments on others under controlled conditions.

This research training program is to provide setter ball training on the accuracy of upper passing in athletes of the Untad club. This research will be conducted at the Untad club. This research was conducted in Palu City, Tadulako University Campus (UNTAD) the time required for 16 meetings.

The research design used is a design with a single group pretest and final test, "One Group Pretest Posttest". In this study, at the beginning of the study, an initial test (pretest) was carried out before treatment was given, then a re-measurement of the final test (posttest) was carried out after treatment was given with the same measuring instrument.

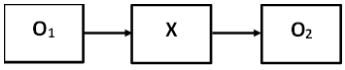


**Figure 1**
Research Design

Population is the entirety of the research subjects. According to (Sugiyono 2017). Population is a generalization area consisting of objects/subjects that have certain qualities and characteristics determined by researchers to be studied, and then conclusions are drawn. Samples are part of the population that represents the population to be studied. Samples are part of the number and characteristics possessed by the population. The sample in this study was part of the volleyball players at the Untad club, as many as 12 people, with the sampling technique used, namely, the saturated sampling technique.

Data collection will be carried out using tests and measurements, while the measurement test uses a test of the passing ability of the setter. Namely, in this study, the test was carried out twice, namely a pretest (initial test) before being given treatment, then a re-measurement of the final test (posttest) after being given treatment with the same measuring instrument.

This research instrument uses tests and measurements in the form of passing accuracy tests (Winarno, 2006). The implementation of the test ropes was set at a height of 11 feet (3.344 m.) and 13 feet (3.952 m.) and placed at a distance of 10.5 feet (3.192 m) from the boundary line placed on the floor for the test area. Each target cloth square was 2 feet (0.608 m.) in size, with a total of 15 squares; thus, the target distance was 30 feet (9.12 m.). The distance between the boundary line where the test area stood and the centre of the target area was 23.5 feet (7.144 m).

The ropes were set at a height of 10 feet (3.04 m.) and 12 feet (3.648 m.), and placed at a distance of 6.5 feet (1.976 m.) from the boundary line on the floor, where the testee stood. The cloth squares, each measuring 2 feet (0.608 m.), were arranged as target squares, with a total of 15 squares, so that the overall target distance was 30 feet (7.904 m). While the distance between the boundary line where the testee stood and the center of the target area was 21.5 feet (6.526 m.), the distance was exactly at square number 7.

Because this study uses an experimental method regarding causal relationships, data analysis in this study is done by comparing the pretest and posttest. The normality test is a test conducted with the aim of assessing the distribution of data in a group of data or variables, whether the data distribution is normally distributed or not.

A hypothesis is a guess or temporary answer to a problem that still needs to be tested for its truth. After all the data has been collected, the next step is to analyze the data. The data analysis technique for analyzing experimental data is to use the t-test (table). The t-test (t-table) will be calculated using SPSS. To determine whether or not the passing is significant after the pretest and posttest, the t-test results are compared with the t-table at a significance level of 5%. If the t-test is greater than the t-table, there is a significant difference; thus, the null Hypothesis (Ho) is rejected and the alternative hypothesis (Ha) is accepted. Sugiono (2022). The steps for calculating data analysis are:

**Table 1.**

Calculations with pre-test and post-test patterns are as follows.

| NO | X1 | X2 | D(X2-X1) | d(D-MD) | d2 |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| | ∑X1 | ∑X2 | ∑D | ∑d | ∑d2 |

After all the above requirements are met, the statistical calculation using the t-test formula can be started. To find the mean difference (MD), use the formula:

$$MD = \frac{\sum D}{N}$$

The t-test calculation in research is guided by the t-test analysis technique by Arikunto (2018) with the following formula:

$$t = \frac{MD}{\sqrt{\frac{\sum d^2}{n(n-1)}}}$$

In order to be said to be significant at the level of similarity of characteristics, the t value must becount must be equal to or greater than ttable. The degree of magnitude (dk) of this t-test is (n-1).

## RESULTS AND DISCUSSION

### Result

This study was conducted using an experimental method where it was carried out with a training setter ball which aims to determine the effect on the passing of female Untad club volleyball athletes. Based on the test results of the effect of the training setter ball on the accuracy of passing of female Untad club volleyball athletes before being given training, from 12 athletes, the highest point obtained was 65, while the lowest point was 50.

After obtaining the initial test results of the influence of the training setter ball on the accuracy of passing over female Untad Club volleyball athletes before being given training, the next step is to provide treatment. Treatment in this case is programmed training in 1 week, given in as many as 4 meetings for approximately 4 weeks. The results of the test of the influence of the training setter ball on the accuracy of passing over female Untad Club volleyball athletes were obtained from 12 students, the highest point was 80, while the lowest point in this final test was 62.

**Table 2.**
Normality Test Normality Test with SPSS "Kolmogorov-Smirnov"

| | | Pre-test | Post-Test |
|---|---|---|---|
| N | | 12 | 12 |
| Normal Parametersa,b | Mean | 59.83 | 72.17 |
| | Std. Deviation | 5,781 | 6,780 |
| | Absolute | .146 | .139 |
| | Positive | .103 | .125 |
| | Negative | -.146 | -.139 |
| **Test Statistics** | | **.146** | **.139** |
| **Asymp. Sig. (2-tailed)** | | **.200c,d** | **.200c,d** |

The results of the Normality test using the SPSS application "Kolmogorov-Smirnov" it is known that the Sign value of the initial test of normal smash ability is .200> 0.05, and the Sign value of the final test is .200> 0.05. So it can be concluded that the data for the initial test and the final test of the accuracy of the upper pass are normally distributed.

**Table 3.**
Difference in passing accuracy of female Untad club volleyball athletes before and after being given training in setter ball exercises.

| NO | X1 | X2 | D (X1-X2) | d (D-MD) | d2 |
|---|---|---|---|---|---|
| 1 | 50 | 62 | 12 | -0.33 | 0.1089 |
| 2 | 51 | 63 | 12 | -0.33 | 0.1089 |
| 3 | 55 | 65 | 10 | -2.33 | 5,4289 |
| 4 | 58 | 69 | 11 | -1.33 | 1,7689 |
| 5 | 57 | 70 | 13 | 0.67 | 0.4489 |
| 6 | 60 | 70 | 10 | -2.33 | 5,4289 |
| 7 | 62 | 73 | 11 | -1.33 | 1,7689 |
| 8 | 62 | 75 | 13 | 0.67 | 0.4489 |
| 9 | 65 | 78 | 13 | 0.67 | 0.4489 |
| 10 | 64 | 79 | 15 | 2.67 | 7,1289 |
| 11 | 66 | 80 | 14 | 1.67 | 2,7889 |
| 12 | 68 | 82 | 14 | 1.67 | 2,7889 |
| **∑** | **718** | **866** | **148** | **0.04** | **28,6668** |

To calculate the Mean Deviation (MD), you can use the following formula:

$$|MD| = \frac{\sum D}{N}$$

$$= \frac{148}{12}$$

$$= |MD| 12.33$$

The difference in the number of values before and after being given training in the setter ball training for female Untad club volleyball athletes, the overall results of the initial test (pretest) were ∑X1 = 718, then in the final test (posttest) the number obtained was ∑X2 = 866, so that the difference value between the initial test (X1) and the final test (X2) can be drawn, which is ∑D = 148.and the deviation value of the difference is ∑d2 = 28.67.

Next, continue with the t-test calculation using the following formula.

$$t = \frac{MD}{\sqrt{\frac{\sum d^2}{n(n-1)}}} = \frac{12,33}{\sqrt{\frac{28,67}{12(12-1)}}} = \frac{12,33}{\sqrt{\frac{28,67}{12(11)}}} = \frac{12,33}{\sqrt{\frac{28,67}{132}}} = \frac{12,33}{0,21} = 58,71$$

From the statistical calculations, it was obtained tcount = 58.71, significant level 5% from dk = (n-1) = (12-1) = 11, obtained ttable value 1.796, so it can be concluded that H0 is rejected and Ha is accepted because the tcount value is greater than the ttable value, namely 58.71 > 1.796.

**Discussion**

Based on the results of the hypothesis testing, it was proven that the average passing accuracy of the female Untad club volleyball athletes before being given circuit training treatment was 59.83, while the passing accuracy of the female Untad club volleyball athletes after being given setter training ball treatment was 72.17, increasing by 12.33.

In this exercise, the examiner uses a training setter ball weighing 1000 grams. Because it increases the training load every time periodically, it can be concluded that an activity can be called training if it is done systematically, repeatedly and has additional loads. At the beginning of training with a higher training load, athletes certainly face difficulties because their bodies are unable to adapt to heavier loads.

When performing the overhead passing technique, arm and finger muscle strength are needed to produce a good passing ball so that teammates can further process the ball pass to produce an attack in the area to score points. Overhead passing is a technique for passing the ball that is done when the ball is above the head with a movement of pushing the arms up and hitting the ball on the tips of the fingers (Nugraha & Yuliawan, 2021). fingers and foot movements when doing overhead passing exercises. Setter training ball exercises are a form of weight training to train the strength of the athlete's arm and finger muscles. The implementation of setter training ball exercises puts a load on the muscles, which can activate the flexor muscles. This affects the strength of the hands and the flexibility of the muscles in the wrist, which can improve

the results of overhead passing (Urahman & Hidayat, 2019). This has an impact on the overhead passing skills of female athletes who are starting to stabilize in doing overhead passes.

Referring to this study, a volleyball player should respond positively to the importance of training, especially training to improve the ability of upper passing in volleyball, which is one of the basic techniques in volleyball that is very important for volleyball players. Theoretically, in this study, training using a training setter ball is one form of training that is quite effective to use in training to improve physical abilities in improving basic technique skills. The better the upper passing is done, the more stable the opportunity to pass in passing, because upper passing in volleyball is very important for organizing attacks.

The results of this study indicate that there is an influence of the training setter ball on the accuracy of the upper pass in the volleyball game of the Untad Club Women's Volleyball Athletes. Thus, overall, from this study, it can be said that the proposed research hypothesis has been accepted and answered the problems and achieved the objectives of this study. In determining the population, sample, research variables and implementation of research activities such as pretest (initial test), treatment (treatment), posttest (final test), all are based on existing theories and rules so that they can provide a good basis for the implementation of this research.

## CONCLUSION

Based on the research results that have been presented, it can be concluded that there is a significant influence of setter ball training on the accuracy of passing for female Untad club volleyball athletes. The tcount obtained is 58.71 while the ttable at a significance level of 5% (0.05), from (db) (n-1) = 12-1 = 11 is 1.796. This means that the tcount value is greater than the ttable or 58.71> 1.796, then the hypothesis (H0), which states that there is no effect, is rejected, and the alternative hypothesis (Ha) is accepted.

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