

The Effect of Smash Training Using Hanging Balls on the Accuracy of Open Smash

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Abstract The purpose of this study was to determine the effect of smash practice using a hanging ball on the accuracy of open volleyball smash games. This research method is to use an experimental research design. The research sample consisted of 60 male volleyball players. The sample was divided into two groups, namely the experimental group and the control group with the matching ordinary pairing technique. The research instrument was the APHEER test smash skills. The data analysis technique used the t-test to see the effectiveness of increasing the training given to the sample, processing data analysis with the SPSS version 23 software program. The results showed that the average accuracy of the smash of male volleyball players who participated in extracurricular activities was the pretest group results, control of 6.83 and posttest control group of 5.65 which means there is no significant increase. Then for the results of the research group that was given exercise, the pretest score of 6.77 and posttest the experimental group was 10.63. Based on the research data, there was a significant increase in the smash results in the experimental group. The conclusion of this research is that there is an effect of smash practice using a hanging ball on the accuracy of open volleyball smashes. The results of this study provide a contribution for coaches and volleyball players to improve smash skills, especially increasing the accuracy of open smashes.

Keywords Hanging Ball Smash Practice, Open Smash

Precision

1. Introduction

Physical education learning in Indonesia includes learning material for big balls and small balls. One of the big ball sports that are often conveyed in physical education learning at elementary, junior high, and high school levels is volleyball. Volleyball is a sport that is popular with many people, not only in Indonesia but also in demand in various regions. Volleyball is a fun sport and can be played anywhere with any number of players, players can give great individual performances, but these players are part of a team, which requires cooperation and mutual trust in friends on the pitch. As Streit points out that the modern game of volleyball has come to occupy an important place in physical education programs, not only in high schools but in primary schools and colleges as well. Volleyball is a very popular sport, and its development is full of constant innovation and maturity of techniques and tactics [1]

Volleyball is a sport that is popular in society as a means of education, recreation, and achievement. The International Volleyball Federation (FIVB) reports there are more than 900 million volleyball players worldwide [2]. Coupled with the number of adults playing the game,

both intensively and as a purely recreational activity, it can be seen that volleyball is rapidly replacing basketball as the number one indoor sport in America [3]. Another opinion also said that Volleyball is a sport that is classified as a big ball game and is in great demand by students and Indonesians because this sport is indeed an alternative sport that is quite easy to master and can be played anywhere without expensive costs [4].

These functional basics must be mastered: serve, receive and pass, setup, "spike" or attack, block, net recovery, teamwork, knowledge of rules [5]. Mastery of the basic techniques of volleyball game is one of the elements that can determine the win or loss of a team in a volleyball game [6]. One of the most difficult basic techniques in volleyball is the basic smash technique. In volleyball, smash is one form of attacking blow technique [7]. "Attack is standard technique (standard jump and arm swing) and other techniques (variations or modifications of the standard technique, either in the jump or in the arm swing)" explains that the attack is a standard technique (standard jump and swing arm) and techniques, other (variations or modifications to standard techniques, either in the jump or in the arm [8].

However, the results of the field data analysis showed that extracurricular male students had difficulty using the basic technique of volleyball smash. They often make mistakes when hitting, hit the hand when hitting the ball incorrectly so that the ball does not cross the net and the ball lands on its field. Therefore, coaches can use different types of methods for the basic technique of volleyball smash practice.

Several previous studies have been carried out to develop various training methods in volleyball both related to hitting techniques in volleyball smashes. Previous research, the value of the posttest experimental class and control class with a significant value of $0.026 < 0.05$, so that the alternative hypothesis is accepted, namely that there is an effect of training using hanging ball media on the basic smash technique [9]. Smash training for volleyball is a training model developed which can be a target-based smash training model [10], with a variety of smash exercises developed by athletes who train more effectively and more efficiently [11].

The process of implementing a perfect smash is divided into four stages, namely: (1) At the start, (2) At the time of repulsion, (3) When hitting, and (4) When landing. This makes it difficult to achieve victory in the match. In addition, the training method used by the trainer still uses the old training method; there is no novelty in each training pattern, so that students do not experience significant achievement. So it is important to find solutions to the difficulties faced by volleyball extracurricular participants at the junior high school level in the city of Palembang. Researchers provide an alternative training method that can be used to train smashes using the hanging ball method. This training method the researchers took is based on the

characteristics of the volleyball game. Volleyball exercise affects students' physical fitness [12].

A hanging ball is a ball that is hung by a rope tied to the end of a pivoting pole with the height of the ball according to the player's reach. Hanging volleyball is a very simple training model, with the concept of the ball being hung on a pole with a height adjusted to the situation and conditions in the field. [13]. Mechanical hitting a ball hitting practice can develop the speed and accuracy of hitting the ball [14]. The ball is used for training, tied with a rope, and hung in such a way that if the ball is touched or hit it will not be thrown far away, but will return to its original position.

Research conducted has not focused on the volleyball smash technique. This study has been directed at the volleyball smash training model. Meanwhile, this study aims to determine the effect of hanging ball training on the accuracy of volleyball smashes so that students can do volleyball smashes. This is a novelty that researchers are going to investigate. The reason for researching volleyball hanging ball exercise is because sports learning must provide a strong physical element to improve the health of students, and the concept of learning volleyball for students must be adapted to the needs, students and ages. This means that students at that age are still very young and interested in volleyball.

2. Research Methods

The research method used was the experiment, with the control and experimental groups. The untreated control group and the experimental group were treated using a hanging ball. There are also data collection techniques in this study using tests and measurements consisting of the initial test (pretest) then after the pretest is carried out, the male students of the extracurricular research are given treatment through the training process using hanging ball exercises, after this step is carried out, then it is followed by the final test (posttest). The final posttest test was carried out to determine the student's final result by using the hanging ball exercise which was carried out 14 times in the basic technique of volleyball smash.

Before doing the pretest, extracurricular male students were given examples of the basic smash techniques that they would practice one by one. Then provide direction regarding the stages in conducting the pretest. The pretest was carried out to determine the initial results of the basic volleyball smash technique in students, the pretest was given to obtain initial data before being given treatment. After the initial data were obtained and students have been given treatment regarding the basic smash techniques. Furthermore, the male students did a posttest, namely the final data collection. Posttest was conducted to measure the students' ability in understanding the basic techniques of volleyball smash after being given training using hanging ball exercises.

The assessment of smash ability is as follows: students are allowed to smash 5 times, while in the assessment, the score to be taken is the ball that crosses the net, which in the field has received numbers. The value is then added up on the opportunity to perform the smash technique.

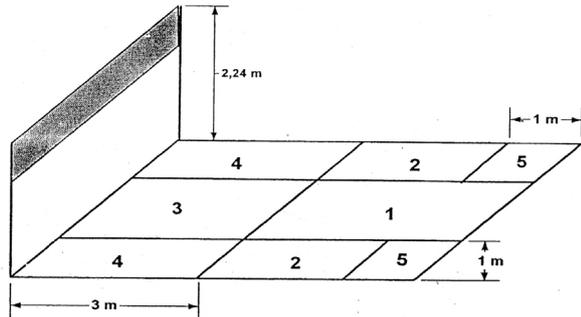


Figure 1. Field for the smash test

The results showed that there was an increase in ability related to student smash techniques through hanging ball training. Hanging ball training is related to the form of training, including reaching for a hanging ball with good and correct basic movements, and is done repeatedly. Exercises using a hanging ball as a whole can train students' basic movements because the ball is in a stationary or passive position. So that it makes students more focused on improving their basic movements and not hesitate to make further movements to achieve the ball. To determine the control and experimental groups, through the Ordinal Peering system, the experimental group and the control group were determined using ordinal peering which was ranked based on the ranking of the test results, as follows an example of a grouping table between the experimental group and the control group. In this study, the researcher used ordinal peering.

Table 1. Ordinal peering

| KK | KE | KK | KE |
|----|----|----|----|
| 1 | 2 | 31 | 32 |
| 4 | 3 | 34 | 33 |
| 5 | 6 | 35 | 36 |
| 8 | 7 | 38 | 37 |
| 9 | 10 | 39 | 40 |
| 12 | 11 | 42 | 41 |
| 13 | 14 | 43 | 44 |
| 16 | 15 | 46 | 45 |
| 17 | 18 | 47 | 48 |
| 20 | 19 | 50 | 49 |
| 21 | 22 | 51 | 52 |
| 24 | 23 | 54 | 53 |
| 25 | 26 | 55 | 56 |
| 28 | 27 | 58 | 57 |
| 29 | 30 | 59 | 60 |

3. Result

The research method used was the experimental pretest-posttest control group method and the experiment with the exercise using a hanging ball. In table 2, the following are descriptive statistics of the pretest-posttest results of the control group:

Table 2. Descriptive statistics of the pretest-posttest results of the control group

| | Mode | Median | Standard Deviation | The Slope of the curve | Average |
|----------|------|--------|--------------------|------------------------|---------|
| Pretest | 4,75 | 6,17 | 14,41 | 0,14 | 6,77 |
| Posttest | 9,27 | 10,28 | 25,17 | 0,54 | 10,63 |

In table 1, it can be seen that the results of the volleyball smash of 60 subjects with a mean of 6.83 were the control group pretest, while the mean of 5.65 was the control group posttest. In table 2, the following are the results of the pretest-posttest test in the Experiment group:

Table 3. Pretest and Posttest of the Experiment Group

| | Mode | Median | Standard Deviation | The slope of the curve | Average |
|----------|------|--------|--------------------|------------------------|---------|
| Pretest | 4,43 | 6,17 | 14,58 | 0,16 | 6,83 |
| Posttest | 3,56 | 4,95 | 9,91 | 0,21 | 5,65 |

Seen the mean of the pretest experimental group was 6.77 and the posttest was 10.63. It can be concluded that the posttest experimental group had a significant increase in using hanging ball training for 16 treatments.

After the pretest and posttest data were obtained, the normality and homogeneity tests were then carried out as a requirement for data analysis. After being tested, it turns out that the data are normally distributed and homogeneous, after the data are declared normal and homogeneous, then a hypothesis is submitted using the statistical "t-test" test criteria for Ho if t-count \geq t-table (1-a), and Ho reject if t-count \leq t-table (1-a), where t (1-a) is t contained in the t distribution table with DK = n1 + n2-2 and probability (1-a), the t-count obtained is 15.42 while t (0.95) (60) = 1.771 is obtained from the t-table distribution tablet. From the calculations, it can be concluded that there is a significant difference between the experimental group and the control group. So the significant effect of hanging ball training on the accuracy of smash open in volleyball games.

4. Discussion

The results showed that the highest volleyball extracurricular participants who were treated using a hanging ball were not given treatment. The results of the

experimental group pretest showed that the highest score for female students was 13 and the lowest score was 2 and the pretest average for the experimental group was 6.77. After hanging ball training for 6 weeks with a frequency of training 3 times a week, the entire study sample was subjected to a final or post-test test. It turns out that there is an average increase of 3.86 so that the average posttest accuracy of smash open in the experimental group volleyball game becomes 10.63. The results of the pretest control group smash open ability of the students had the highest score 13 and the lowest score was 2, and the pretest average of the control group was 6.83. While the results of the posttest control group have the highest score of 12 and the lowest score is 1, and an average of 5.65, so there is an average decrease of -1.18.

The research subjects were male students of volleyball extracurricular activities. They need physical activity to build strength, coordination, and confidence which will consequently lead them to lay the groundwork for a healthy lifestyle through gaining more control over how active they are [15]. Extracurricular activities support the process of life skills through the transfer of skills and application outside the place of learning [16]

Based on the pretest results of the experimental group with an average of 6.77 and 10.63 posttest, there was an increase of 3.96 while the control group had an average of 6.83 and posttest of 5.65 and there was a decrease of -1.18, while the difference between the two groups in the posttest occurred the mean difference in criteria was 4.98. The improvement and progress of this research occur in every meeting because every time the researcher makes movements, he always provides an example and input to each student so that it is easier for them and imitating good and correct smash movements and correcting movements made by students. The first meeting of many students still experienced difficulties because the height of the ball hanging could not be smashed by the students and the wrong basic motion made the jump height not optimal, but with practice from time to time, it was easier for students to find the right time to reach the hanging ball. Because the basic motion that is good and correct will make the jump more leverage.

5. Conclusions

Based on the results of the research on the effect of hanging ball smash training on the accuracy of the open smash, the following conclusions can be drawn: hanging ball open smash training increases the smash ability of male students in volleyball extracurricular activities, this can be seen from the increase in the average pretest with the posttest experimental group of 6.77 increased to 10.63, while the average pretest and posttest control group experienced a small tp increase of 5.65 to 6.83. So it can be concluded that there is a significant effect of training

using a hanging ball on the accuracy of open volleyball smashes.

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