ISSN : 2087-927X (print)
ISSN : 2685-0516 (online)
Altius: Jurnal Ilmu Olahraga dan Kesehatan
Volume 13, No. 1, May 2024, pp. 80-92
http://dx.doi.org/10.36706/altius.v13i1.63

Free passing training model for improving the underpassing skills of male volleyball players aged 12-14 years

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ABSTRACT

The aim of this research is to determine the effect of the free passing training model on down passing skills in male volleyball players aged 12-14 years at Permata volleyball Club. The method in this research is quantitative descriptive. This type of experimental research uses a one group pretest and posttest design research design. The sample in this study was 34 male volleyball players aged 12-14 years at Permata volleyball Club. The sample in this study was selected using a purposive sampling technique where players took part in performance coaching at the Permanta Volleyball Club. The instruments in this research were the Brumbach Forearms Pas Wall Volley Test and the AAHPER face pass wall-volley test. The data analysis technique uses the t test (paired sample t test). t Based on the t test results, the underpassing passing data has an Fcount of 13.265 and an Ftable value of 2.036 and a underpassing passing t sig of 0.000 < 0.05. These results mean that there is an influence of the free passing training model on the bottom passing skills of male volleyball players aged 12-14 years at Permata Volleyball Club. This free paasing training model is appropriate for coaches and the general public to implement for volleyball players aged 12-14 years.

Keyword: training model, free passing, underpassing

ARTICLE INFO

Article History:
Accepted : 7th May 2024
Approved : 29th May 2024
Available Online May 2024

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INTRODUCTION

In the game of volleyball there are several types of basic techniques which include lower passing, upper passing, serve, block and smash techniques. Passing is a basic volleyball technique that functions to play the ball with teammates on the playing field itsel (Astuti, 2017) f. Apart from that, passing plays a very important role and is useful for supporting attacks or smashes. The attack will produce points if the reception of the serve with passing is done well so that the setter or feeder will provide a good pass to the smasher. Good passing reception influences the attack results of Surabaya Bayangkara Samator volleyball players in the 2019 Pro League (Achirul Adib, 2019) Meanwhile, the results of the analysis of the failure of Jakarta Garuda players in the 2020 Pro League, one of the factors was poor passing (Putri Dewi Sudarti, 2020). Based on the results of this research, passing is very important and must be owned by every player to help the team's achievements.

Underpassing is a technique for holding the ball using both hands. The way to do a

underpassing is to start with an upright position, both feet shoulder-width apart, then both knees slightly bent, body slightly bent forward, both arms in front of the chest and slightly lowered, ready. Receive the ball with a slight upward swing. Meanwhile, overhead passing is a technique for holding the ball using both hands raised upwards. The method is to bend your elbows slightly in front of your head, the position in contact with the ball is just above your forehead, your fingers are opened in a cup or semicircle and ready to receive the ball, when the ball is in your hand, the ball is pushed up and the ball makes contact. by hand should not be done for too long (Sulistiadinata, 2020)

Ideally, a volleyball player must have good passing skills to be able to excel. Underpassing can be trained using appropriate and varied training models, so that players can easily carry out and improve their passing skills. As the results of research conducted by (Rudi & Arhesa, 2020) with the results of research that using the lower passing learning model in school-aged children can improve good volleyball passing skills. Furthermore, the results of research from (Daulay & Daulay, 2018) that a variety of passing exercises improves the results of volleyball passing skills. Based on several research results, it can be concluded that improving the passing skills of school-aged volleyball players can be done by providing varied and sustainable training models.

However, based on the results of observations in the field which were carried out directly by carrying out down passing tests on volleyball players, researchers obtained data as a basis for analyzing subsequent actions in the form of solutions given to problems found in the field. Of the 34 participants who underwent the lower passing test, 72% of them obtained lower passing test results below the average for players aged 12-14 years in their mastery of lower passing. Apart from this data, researchers also conducted interviews with players and coaches to find out the causes of the test results. Based on the results of direct interviews, one of the problems is that currently the training methods used are still not varied enough so that the training models carried out by the players are not optimal and this creates boredom for the players to participate in training.

A varied training model is one solution to improve volleyball players' passing skills. According to (Abrasyi et al., 2018) which states that the volleyball uderpassing training model is effective for improving underpassing movement skills. Based on the results obtained from the model effectiveness test, it can be concluded that the development of the volleyball passing training model that has been implemented has increased. proven by the initial and final tests, there were significant differences and was declared suitable for use in junior high school students' training activities. Furthermore (Sugianti et al., n.d.) produce alternating down

passing research with gradual play increasing under passing. Learning the game of volleyball is fun for players (Hambali et al., 2022). The volleyball passing training model is effective and suitable for use to improve players' passing at AL Huda Wajak Vocational School, Malang (Mushofi, 2017). Based on the results of this research, it can be concluded that many passing training models have been developed and implemented by previous researchers which have had an impact on improving the passing skills of volleyball players

The free passing training model is an exercise that is carried out with the same movements as when making a down pass but is given variations in movement by utilizing training media or movement forms. This type of training model has been carried out in previous research with the results of the research stating that there is a significant difference between paired training and free training on volleyball underpassing ability. (Hadi, 2022). Furthermore, there is the influence of various training methods on the results of volleyball underpassing skills. Many factors influence basic volleyball technical abilities (Destriana et al., 2020). The development of a volleyball player skill model has an impact on the skill results of Sriwijaya State Sports School volleyball players (Muslimin et al., 2020) . Variations in sitting down passing practice models and walking down passing practice models can improve the down passing skills of class VI JEMBER students (M. Taufiq Hidayat, 2015).

Volleyball players aged 12-14 years can be given training models, both physical and technical training, to improve performance. The research results show that improving training technology for volleyball players aged 12-14 years at the sports school improves the players' physical condition (Kh Turapova & Babakulov, 2023). Providing physical training for volleyball players aged 10-19 requires special attention by adjusting the physical characteristics of the players (Boichuk et al., 2023). The differences in the atropometric characteristics of players aged 13-15 years are very high and need to be considered when providing physical training (Nešić et al., 2014). Core training affects the body balance of volleyball players aged 12-14 years when making vertical jumps (Şahin & Özdal, 2020). Based on the reality in the field and also the theory above, researchers conducted research to improve the passing skills of male volleyball players aged 12-14 years. The training method that will be given to players is the free passing training model which is the solution of choice to improve volleyball underpassing skills aged 12-14 years.

METHODS

This research is experimental research. The research design used in this research is in the

form of a one group pretest and posttest design, namely an experiment carried out on one group only without a comparison group. This design can be described as follows:

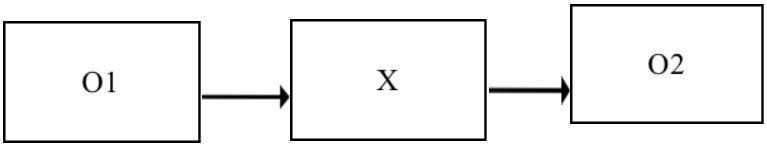

Figure 1. Research Design

Keterangan :

O1 : Pretest

O2 : Posttest

X : Treatment

In this research, the test was carried out twice, namely before and after treatment. The difference between the Pretest and Posttest is assumed to be the effect of the treatment or experiment. So it is hoped that the results of the treatment can be known more accurately, because there is a comparison between the conditions before and after the treatment. The treatment given in this research was in the form of play. The sample treatment was carried out at 16 meetings at the Permata Bola Voli Club.

Population and Sample

Population

Population is a generalized area consisting of objects and subjects that have certain qualities and characteristics determined by the researcher to be studied and then conclusions drawn. Meanwhile, the sample is part of the number and characteristics of the population. The population in this study were Permata Bola Volleyball Club players, totaling 34 people.

Sample

The sample is part of the selected population elements. The sample in this study was selected using a purposive sampling technique, which is a sampling technique with certain considerations, namely only players who took part in volleyball training. The entire population was sampled in the study, totaling 34 male baol volleyball players aged 12-14 years Permata Bola Voli Club.

Research Instrument

Research instruments are tools or facilities that researchers use in collecting data to make their work easier and better. The instrument in this research is to use a test, namely the underpassing test using the Brumbach Forearms Pas Wall-Volley Test (Suryaman et al., 2023). The size for the Brumbach forearms fitting the wall-volley test is a smooth and even wall with

a line width of 2.54 cm and a length of 1.52 m with a height from the floor of 2.44 m.

Data Analysis Technique

The data analysis technique uses the t test (paired sample t test). After the data is collected, the next step is to analyze the data. The data analysis technique for analyzing experimental data with the pretest posttest design model is to use the t test (paired sample t test). Hypothesis testing is used to determine whether or not there is a significant effect from the training provided. Hypothesis testing is carried out with a t test of two correlated samples, using the help of SPSS 24 for windows evaluation version, t test formula (paired sample t test) are as follows

$$t = \frac{Md}{\sqrt{\frac{\sum X^2 d}{N(N-1)}}}$$

Information:

Md : Mean of the difference between pretest and posttest (pretest-posttest/posttest-pretest

Xd : Deviation of each subject (d-Md)

∑X2d : Sum of squared deviations

N : Subjects in the sample

d.b : Determined by N-1

Decision making criteria If t count > t table and p <0.05, it means that there are differences in free passing training models that can improve the volleyball playing skills of male volleyball players aged 12-14 years. Meanwhile, to calculate the percentage increase in volleyball passing technique skills between the initial test and the final test, use the following formula: Percentage Improvement = (Mean Posttest / Mean Different) x 100% Mean Posttest = Mean Pretest - Mean Pretest.

RESULTS AND DISCUSSION

Results

This Frequency Distributio

Underpassing Pretest Data

Based on the research results, research statistics were obtained for pretest data on passing down from 34 male volleyball players aged 12-14 years, namely a minimum score of

13, a maximum score of 24, an average of 18.00, a median of 18, a mode of 17 and a standard deviation of 2.818. The description of the research results is presented in a frequency distribution with the formula for finding the number of classes = 1 + 3.3 Log N, range = maximum value – minimum value and class length with the formula = range/number of classes. A description of the results of the lower passing pretest research can be seen in the table below.

Table 2.Underassing Pretest Frequency Distribution

Class	***Interval***	***Frecuncy***	***Persentase (%)***
1	13 - 15	8	23,53
2	16 - 18	11	32,35
3	19 - 20	10	29,41
4	21 - 23	3	8,82
5	24 - 26	2	5,88
Total		34	100

When displayed in diagram form, it can be seen in the image below:

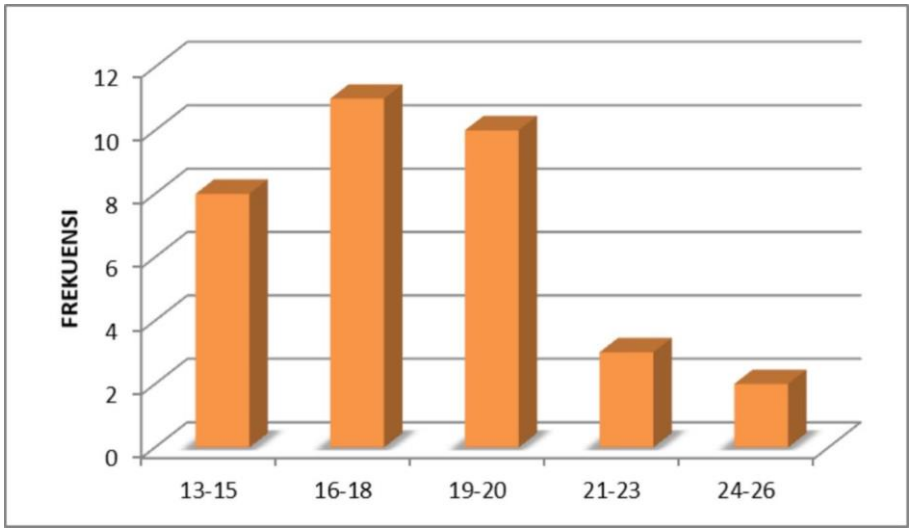

Figure 2. Diagram of Underpassing Research Results

From the research results, it was found that most of the pretest underpassing abilities were in the poor category with a percentage of 32.35% (11 players), in the very poor category with a percentage of 23.53% (8 players), in the medium category with a percentage of 29.41% (10 players). , in the good category with a percentage of 8.82% (3 players) and in the very good category with a percentage of 5.88% (2 players).

Underpassing Posttest Data

Based on the results of the research, research statistics were obtained for posttest data on lower passing from 34 male volleyball players aged 12-14 years, namely a minimum score of 16, a maximum score of 29, an average of 22.59, a median of 23, a mode of 20 and a standard

deviation of 2.754. The description of the research results is presented in a frequency distribution with the formula for finding the number of classes = 1 + 3.3 Log N, range = maximum value – minimum value and class length with the formula = range/number of classes. A description of the results of the lower passing posttest research can be seen in the table below

Table 3. Frequency Distribution of Underpassing Posttest

Class	Interval	Frecuncy	Persentase (%)
1	16 - 18	2	5,88
2	19 - 21	9	26,47
3	22 - 24	14	41,18
4	25 - 27	8	23,53
5	28 - 30	1	2,94
Amount		34	100

When displayed in diagram form, it can be seen in the image below:

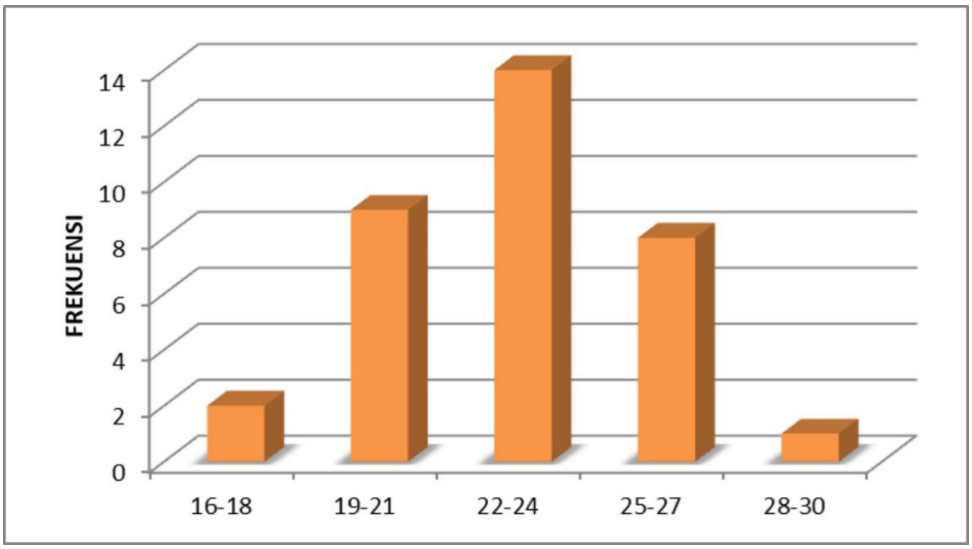

Figure 3. Diagram of Lower Postest Underpassing Research Results

From the research results, it was found that most posttest underpassing abilities were in the moderate category with a percentage of 41.18% (14 players), in the very poor category with a percentage of 5.88% (2 players), in the poor category with a percentage of 26.47% (9 players) , in the good category with a percentage of 23.53% (8 players) and in the very good category with a percentage of 2.94% (1 player).

From the statistical results of the research results, it can be seen that the mean (average) value of the lower passing pretest is 18.00 and the mean (average) value of the lower passing posttest is 22.59. From the results of the mean value, an average difference of 4.59% was obtained, resulting in an increase percentage of 52.94%.

Prerequisite Test

Before data analysis is carried out, data analysis prerequisite tests will be carried out which include normality tests and homogeneity tests. The complete prerequisite test results can be seen in the attachment, and below is a summary of the prerequisite test results obtained:

Normality test

The normality test was tested on each research data obtained during the pretest and posttest. The normality test was carried out using the One Sample Kolmogorov Smirnov Tets formula, and the process was carried out using the SPSS 24 computer program. Data is normally distributed if the Significant value (Sig) obtained from the calculation is greater than 0.05. The following are the normality test results obtained

Table 4. Normality Test Results

Pasing Training Model		***Test Statistic***	***Asymp. Sig (2-tailed)***	***Information***
Underpassing	Pretest	0,092	0.200	Normal Data Distribution
	Posttest	0,120	0.200	Normal Data Distribution

Based on the table above, the results of the normality test using the One Sample Kolmogrov Smirnov Test show that the significant value of passing under the pretest is 0.200 > 0.05, the significant value of passing under the posttest is 0.200 > 0.05, so it can be concluded that the variables in this panel are all normally distributed.

Homogeneity Test

In the homogeneity test, the criteria used to determine whether a test is homogeneous is if p > 0.05 and F hit < F test table it is declared homogeneous, if p < 0.05 and F hit > F test table it is said to be inhomogeneous. The homogeneity test results of this research can be seen in the following table:

Table 5. Homogeneity Test Results

Passing Practice Model	***F Hitung***	***Sig F***	***Infromation***
Underpassing	0,979	46,112	Homogen

From the table data above, it is known that the lower passing data obtained an Fcount value of 46.112 and an F sig value of 0.979 > 0.05, so it can be concluded that the data in this study has a homogeneous variance.

t test (Paired Sample t Test)

Paired sample t test is one of the testing methods used to assess the effectiveness of treatment, characterized by differences in the average before and the average after the treatment is given. The results on the underpassing data can be seen in the following table:

Table 6. t Test Results (Paired Sample t Test)

Pretest-Posttest	*t Table*	*t Count*	*Sig t*	*Information*
Underpassing	2,036	13,265	0,000	Ho Reject

Based on the table above, the underpassing data has an Fcount of 13.265 and an Ftable value of 2.036 obtained with degrees of freedom (df) = n-2 or 34-2=32 and a significance level of 5% or 0.05. Significant lower passing data is 0.000 < 0.05. These results mean that there is an influence of the lower passing training model on the playing skills of male volleyball players aged 12-14 years.

Discussion

Volleyball is a type of game that is currently very popular. The sports industry has become an inseparable part today, including the sport of volleyball. In Indonesia, the sport of volleyball is already a sports industry, such as the implementation of the Volleyball Pro League event. This event involves a lot of things related to the sports and entertainment industry. Proliga volleyball championship as a sports industry and economic booster (Sujarwo, 2024). This indicates that the game of volleyball is very popular in the community and can also be enjoyed by the whole community through the media. This game develops from an early age to a professional level such as players who play in the Pro Volleyball League.

The development of players aged 12-14 years has been taught to play volleyball properly and correctly, especially the basic techniques, so that when they are of age they can become professional athletes. Players aged 12-14 can also be given physical and technical training to improve their performance. Research results: The development of athletes aged 12-14 years has been carried out by many previous researchers and has produced athletes who have potential in the future, as per the research results (WASIMAN, 2019), (Marlina Siregar et al., n.d.), (Andre Setianugraha, 2022). In this study, the sample was aged 12-14 years who took part in achievement coaching. By carrying out performance development from that age, outstanding athletes will be ranked and make it easier for clubs and regions to recruit athletes to take part in national and international events.

The training method provided is a free passing training model to improve the down

passing skills of male volleyball players aged 12-14 years. Varied training models will improve a person's technical skills and increase motivation in participating in training (Aswara, 2016). The training model for variations of volleyball passes and smashes improves the skills of volleyball players (Putra et al., 2021), (Andika Wulandari Pasaribu, 2020), (CHHIEDE, 2023), (Dwiyogo, 2013). The volleyball underpassing development model improves the results of volleyball underpassing skills (Mu'arifuddin, 2018), The results of this research are in line with the results of research in this article that by using the free passing training model for male volleyball players aged 12-14 years with data from underpassing test results, an Fcount of 13.265 was obtained and an Ftable value of 2.036 with degrees of freedom (df) = n -2 or 34-2=32 and a significant level of 5% or 0.05. Significant low pass data is 0.000 < 0.05. This training model had quite a big impact because during the training provided by the researchers, the entire sample was very enthusiastic about participating in the entire series of exercises. The entire research sample was very motivated to do free training, because the free passing training models provided were varied and also training models that had never been given by the coach before. The results of this research can of course be implemented or given to volleyball athletes aged 12-14 years, where the training model chosen will be easy to apply to athletes to improve their bottom passing skills.

CONCLUSION

The results of this research show that the free passing training model given to male volleyball players aged 12-14 years has had a significant impact on improving lower passing skills. The training model is very appropriate and in accordance with the characteristics of children aged 12-14 years who are still in the stage of growth and development of children's physical motor skills. The selected free passing drills are varied and fun and easy for players aged 12-14 to do. Player motivation also increases because the free passing training models vary so that players are enthusiastic about participating in each stage of the training provided.

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