

#### **Original Article Research**

### The Influence of Exercise with Target Wall Media on Volleyball's Under-Passing Ability in Middle High School Students

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*Received:* 10/05/2022 *Revised:* 29/05/2022 *Accepted:* 04/06/2022

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#### Abstract

The purpose of this study is to improve the ability to pass down volleyball with the target wall media. This type of research is an experimental study with lower passing exercises using a target wall using circles and ropes on the lower passing ability of the students. The research subjects are volleyball extracurricular students in middle-high school; all students are 20 children. Based on the results of the calculation of the first hypothesis test, it is known that there is an effect of bottom passing practice using a target wall using a rope on the ability to pass down. The resulted of the calculation of the second hypothesis were known that there was an effect of lower passing practice using a target wall by using a circle on the ability to pass down. The resulted of the average comparison were known that the lower passing practice using the target wall using a circle is better than the under-passing exercise using the target wall using a rope on the volleyball bottom passing ability. The resulted of the comparison of the two training methods concluded that the lower passing exercise using a target wall using a circle had better results compared to the lower passing practice using a target wall using a rope on the volleyball bottom passing ability of the students.

Keywords: bottom passing practice, target wall using circle and rope

#### How to cite:

Azizah, A. R., Fadillah, I., & Susanto, A. (2022). The Influence of Exercise with Target Wall Media on Volleyball's Under-Passing Ability in Middle High School Students. *JUMORA: Jurnal Moderasi Olahraga*, 2(1), 53-67. https://doi.org/10.53863/mor.v2i1.225

#### 1. INTRODUCTION

Physical learning education tends to be traditional, there is still a lot of education that is



centered solely on teachers and does not increase the attention of student talents. Learning orientation must be adjusted to the growth of children, and the content and affairs of modules and submissions must be adjusted so that it is interesting and exciting (Burhaein et al., 2022; Prasetya, 2021; Sulistiantoro & Setyawan, 2021). Sports and health physical education is an integral part of education, aiming to develop aspects of physical fitness, movement skills, critical thinking skills, social skills, reasoning, emotional stability, moral actions, aspects of a healthy lifestyle, and the introduction of a clean environment through physical activity, sports and selected health that are systematically planned to achieve national education (Irawan & Prayoto, 2021; Phytanza et al., 2022; Pramantik, 2021).

Physical education of sports and health is a process of learning through a physical activity designed to improve physical fitness, develop motor skills, knowledge and behavior of healthy and active life, and sportsmanship attitude, and emotional intelligence (Azizah & Sudarto, 2021; Burhaein, Tarigan, Budiana, Hendrayana, Phytanza, Lourenco, et al., 2021; Demirci & Phytanza, 2021). The learning environment is carefully organized to promote the growth and development of the entire realm, physical, psychomotor, cognitive, and affective of each student (Burhaein, Demirci, Lourenço, Németh, & Phytanza, 2021; Widodo & Najibuzzamzam, 2021; Widodo & Zainul, 2021). The process of education in school is something that needs to be planned carefully. Sports and health physical education is an integral part of total education that tries to achieve the goal of developing physical, mental, social, and emotional fitness for the community with physical activity rides (Nanda et al., 2021; Sibarani & Manurung, 2021; Widiyono & Mudiono, 2021). Therefore, education planning (Education Implementation Plan) becomes something that is very meaningful. The arrangement of the education implementation plan is useful to help and facilitate teachers so that the education program implemented is really focused on the activities of students (Catur & Mujiriah, 2021; Phytanza, Mumpuniarti, Burhaein, Lourenço, et al., 2021; Sutopo & Misno, 2021).

The success or failure of the implementation of teaching and learning activities can be known after evaluation activities. The learning process of a teacher begins with the activity of preparing a teaching program or lesson plan, then carrying out a learning implementation program and the teacher conducts an evaluation or assessment to find out its success (Irawan & Limanto, 2021; Jannah et al., 2021; Phytanza, Burhaein, Lourenço, et al., 2021). Learning is the process of interaction of learners with educators and learning resources in a learning environment. Learning is the assistance provided by educators so that there can be a process of obtaining knowledge and knowledge, mastery of skills and Tabita, and the establishment of attitudes of trust in students (Burhaein, Tarigan, Budiana, Hendrayana, & Phytanza, 2021; Mumpuniarti et al., 2021; Phytanza, Mumpuniarti, Burhaein, Demirci, et al., 2021). Learning is a complex activity, because it is in essence not only conveying a message but also a professional activity that requires teachers to be able to use basic teaching skills in an integrated manner and create efficient situations (Burhaein, Tarigan, Budiana, Hendrayana, Phytanza, Demirci, et al., 2021; Phytanza, Burhaein, & Pavlovic, 2021; Purwanto, Nopembri, et al., 2021). Therefore, in teacher learning, it is necessary to create a conducive atmosphere and learning strategies that interest students.

Volleyball is a sport that can be played by children until people are old. The game of volleyball basically to 2 principles technical as well as psychic (Fradejas & Espada-Mateos, 2018). The technical principle is that the player turns the ball with the waist up, soaring in the air over the net to drop the ball on the opponent's field to find victory sportsmanship.



Psychically it is playing happily and good cooperation (Mazur & Superlak, 2018; Suzianto & Damanik, 2014). Volleyball games are a team consisting of more than one player, so the success to play is largely determined by sportsmanship and player cooperation. The principle of the game is quite simple, which is to play the ball before the ball hits the floor of the field (Kristiawan & Sukadiyanto, 2016; Purwanto, Lumintuarso, et al., 2021). Volleying or bouncing the ball into the air can use all members or parts of the body from the toe to the head with a perfect reflection.

In volleyball learning in junior high school found students who were wrong in practicing passing down. Such as the position of the foot, the behavior of the body, the pressure of the ball on the hand, and the direction of the ball after passing by students are not suitable for the desired purpose. Not only that, but other aspects also that effect are monotonous educational procedures taught by teachers and limited facilities and infrastructure in schools. From this reflection, it is very clear that the volleyball education process is less than optimal. This is due to two things, namely: Mastery of passing techniques in volleyball games is still low and the absorption rate of passing modules in volleyball games is only 20% This is obtained from the average completion of passing learning in volleyball in each class is only 7 students (Azizah & Sudarto, 2021; Fitriansyah, 2019).

Based on the background of the problems that have been described, it can be identified as follows, volleyball learning is still monotonous because the teacher teaches directly about the subject matter, the position of the feet, and the attitude of the student body when passing there are still many wrongs, the ball is allowed on the hand and the direction of the ball after passing by students is not in accordance with the desired purpose, limited facilities, and infrastructure in volleyball learning.

The formulation of the problem in this study is to "improve the learning of passing under volleyball with the target wall method for junior high school students". The purpose of this study was to find out the improvement in the results of passing drills under volleyball through the target wall for junior high school students.

#### 2. METHOD

#### 2.1 Participants

The determination of participants is based on purposive sampling techniques. This technique is a way of determining samples with certain considerations. From the above statement, the conditions that must be met in the following sampling.

- 1. Sampling is based on certain traits, traits, or characteristics, which are the basic characteristics of the population.
- 2. The subject taken as a sample is really the subject that contains the most characteristics found in the population.
- 3. The characteristics that meet the characteristics of students to be studied are as follows: (1) volleyball extracurricular students; (2) Age 12-14 years; (3) Basic techniques are still in the early stages of learning.
- 4. If the sample does not comply with the requirements or criteria that have been determined, then the sample is declared dead as a sample.
- 5. Based on the criteria above, the number of participants in this study is 20 students of volleyball extracurricular participants.



#### 2.2 Research Design

This study uses experimental methods. The experimental method is one of the quantitative methods, used especially if the researcher wants to conduct experiments to find the influence of independent variables/treatment/certain treatments on dependent variables/results /output under controlled conditions (Fraenkel et al., 2012). This means that the researcher must be able to control all variables that will affect the outcome except the independent variable (*treatment*) that has been established.

The method uses a symptom called exercise. With the exercises given, there will be a causal relationship as an influence of the implementation of the exercise. The experimental method with matched by subjects' abbreviated M-S is the separation of the pairs of subjects each into the control group and into the experimental group will automatically balance into the two groups (Fraenkel et al., 2012; Sugiyono, 2016). Experimental methods are activities that include initial tests, training, and final tests. More details can be described in the following design.

#### Table 1.

#### M-S pattern research design

Variable	Pre-Test	Treatment	Post-Test
Passing down using the target wall using a circle	XI	0	X2
Passing down using the target wall using a circle	XI	0	X2

Description: XI = Initial test; O = Treatment; X2 = Final test

#### 2.3 Instruments

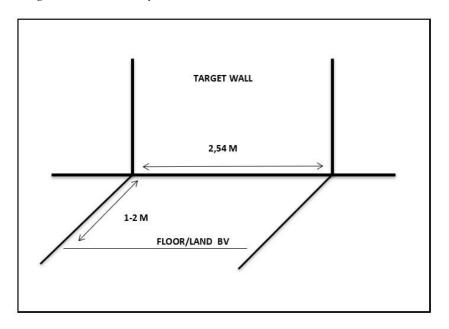
An instrument is a tool used by experts in gathering information so that the work is simpler, and the results are better, in a more thorough, thorough, and planned sense with the aim of making it easier to measure. The instrument used in the study was the Brumback lower arm finish divider assessment – a volleyball assessment with a validity of 0.80 and reliability of 0.869 (Fitriansyah, 2019). The purpose of the implementation of this test is to obtain the results of the ability to turn the ball into the wall or wall by using the bottom pass.

Tools and equipment: a smooth and flat wall with a target measuring 2.54m wide of the plot is unlimited, the distance of the target plot from the floor as high as 2.43m, a stopwatch, note sheet, stationery, volleyball, meter, and whistle Instructions for implementation: before carrying out the test, students will be explained the implementation of this test. As for the implementation, the student faces the wall with a volleyball in hand. Each student conducts three trials or initial tests (pre-test) then treatment after that final test (post-test) to find out the results of the treatment. The assessment is that students do three tries, the value of each experiment is the number of valid bounces in accordance with the rules and enter the target wall area, if the ball hits the line is in (legitimate), the final value is evenly distributed from the best two tries.



#### Figure 1.

Target Wall on Volleyball Test



#### 2.4 Procedures

Data collection in research is carried out at extracurricular time. Extracurricular volleyball MTS Ma'Arif NU 1 Sumpiuh is done 3 times a week, namely on Mondays, Wednesdays, and Saturdays at 15.00-17.00. To get a sample of authors applying for a research permit to the Principal of MTS Ma'Arif NU 1 Sumpiuh Banyumas Regency with a total of 20 students. The data collection methods in this study follow the design of experimental research. experiment. In taking the data, before getting the treatment, participants must do a pre-test first and then be given treatment and at the end will be held post-test. Furthermore, the initial test was held and the results were ranked from the highest to the lowest. Then divided into two groups using ordinal pairing, using ABBA methods, namely: a control group of 10 students passing down using the target wall using ropes. After students tried to do 12 exercises for control groups and experiments, a final test was held. The implementation of the final test is the same as the initial test, with the aim of knowing the results of the exercises achieved by the trying players from the control group and the experimental group after passing down.

#### 2.5 Data Analysis



The data that has been obtained will be processed using a short t-test. T-tests are commonly used in correlated experiments. There are two formulas that can be used to investigate the significance of the mean difference from correlated samples, usually called the long formula and the short formula. The analysis of the data uses a t-test that previously had to be known the difference in mean by using the formula:

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

Information:

MD = Mean difference

 $\Sigma D$  = The number of differences from each subject pair

N = Number of pairs or number of subjects

Then the value t can be searched by using the t-test formula, namely:

$$\mathrm{MD} = \frac{MD}{\sqrt{\frac{\Sigma d^2}{N (N-1)}}}$$

Information:

MD = Mean difference

 $\sum d^2$  = Individual deviation from MD

N = Number of subjects

#### 3. **RESULTS**

The results showed an influence between lower passing exercises using the target wall using ropes and circles on the ability to pass under volleyball in junior high school students. The comparison between the two exercises was known that the lower passing exercise using the target wall by using a circle is better than the lower passing exercise using the target wall using a rope against the ability to pass under volleyball in students.

#### 3.1 Experimental and Control Group Description Data

Description of control group research data (passing using rope) for pre-test data is known to many of N (Respondents) as many as 10. Obtained an average of 31.3 passing results with a median (middle value) of 31.5 and a mode of 33. The result is a minimum of 27 and with a standard deviation of 2.79. As for the post-test data, it is known that the number of N (Respondents) is 10 obtaining an average passing result below 48.3 with a median of 49 and a mode of 51. A minimum result of 43 and a maximum result of 52 with a standard deviation of 3,056. More details can be seen in the following table 2.

#### Table 2.

Pre-test and Post-test Statistical Data of Experimental Groups

No	Statistical Data	Pre-test	Post-test

	D		Volume 2, N https://doi.org/10.53863	ISSN: 2797-8761 Io.1, Month 2022 /mor.v2i1.225	JUMOR JURNAL MODERASI OLAH
-	1	Ν	10	10	
-	2	Mean	31,3	48,3	
-	3	Median	31,5	49	
-	4	Mode	33	51	
-	5	Standard deviation	2,79	3,056	
-	5	Minimum	27	43	
-	6	Maximum	37	52	
-					

The distribution of pre-test and post-test data of experimental groups can be seen in the form of the graph below:

#### Figure 2.

Graph of frequency distribution of pre-test and post-test data in the experimental group



The description of the control group sample research data for pre-test data in the number of N (respondents) as many as 10 obtained an average passing result below 31.1 with a middle value (median) of 31 and a mode of 32. Minimum result of 27 and maximum result of 36. With a standard deviation of 2.84. As for the post-test data known from N (respondents) as many as 10 then obtained an average of 49.6 with a median of 49.5 and a mode of 48. The result is at least 47 and the maximum result is 54. Then the standard deviation is 2.06. For more details can be seen in the following table:

#### Table 3.

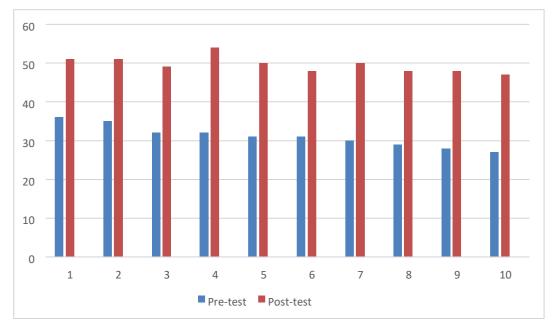
Control Group Pre-Test	and Post-Test Statistical Data
------------------------	--------------------------------

No	<b>Statistical Data</b>	Pre-test	Post-test
1	Ν	10	10
2	Mean	31,1	49,6

Departi		JRNAL MODERASI OLA E-ISSN: 27 Volume 2, No.1, Mo pi.org/10.53863/mor.v2 Ma'arif Nahdlatul Ulama K	197-8761 nth 2022 211.225
3	Median	31	49,5
4	Mode	32	48
5	Standard deviation	2,84	2,06
5	Minimum	27	47
6	Maximum	36	54

Figure 3.

Graph of frequency distribution of pre-test and post-test data in the Control group



## **3.2** The influence of lower passing exercises using the target wall using a rope against the lower passing ability

The effect of the lower passing exercise using the target wall using the rope against the lower passing ability is calculated using the t-test.

$$t = \frac{[MD]}{\sqrt{\frac{|\Sigma d^2|}{N - (N - N1)}}}$$

Known data as follows:



# MD = 17 $\Sigma d2 = 44$

N = 10

So, the calculation is as follows:

$$t = \frac{[MD]}{\sqrt{\frac{|\Sigma d^2|}{N - (N - N1)}}}$$

$$=\frac{17}{\sqrt{\frac{44}{10(10-1)}}}$$

$$=rac{17}{\sqrt{rac{44}{1,11}}}$$

$$=\frac{17}{\sqrt{39,6}}$$

$$=\frac{17}{6,292}$$

= 2,701

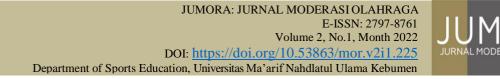
Based on the results of the calculation above, t-count is known to be 2,701 with N of 10 and a probability rate of 5% known to be t-table of 2,228. Thus t-count > t-table (2,701 > 2,228) so that it can be concluded that there is an influence of lower passing exercises using the target wall using a rope against the lower passing ability.

## **3.3** The influence of lower passing exercises using the target wall by using a circle against the lower passing ability

The comparison of pretest and post-test results is further calculated using the t test.

Known data as follows:

MD = 18,5



$$\Sigma d^2 = 10,5$$

So, the calculation is as follows:

$$t = \frac{(MD)}{\sqrt{\frac{|\Sigma d^2|}{N - (N - N1)}}}$$

$$=\frac{18,5}{\sqrt{\frac{42,5}{10(10-1)}}}$$

$$=\frac{18,5}{\sqrt{\frac{42,5}{1,11}}}$$

$$=\frac{18,5}{\sqrt{38,288}}$$

$$=\frac{18,5}{6,187}$$

=	2.	.99
	~,	, , ,

Based on the results of the calculation above, t-count is known to be 2.99 with N at 10 and a probability rate of 5% is known to be t-table of 2,228. Thus t-count > t-table (2.99 > 2,228) so that it can be concluded that there is an influence of lower passing exercises using the target wall using a circle against the ability to pass down.

### **3.4** Comparison of the results of the influence of passing down using the target wall by using ropes and circles against the ability to pass down

To find out the comparison between the lower passing exercises using the target wall using ropes and circles, it is done using the following formula:

$$M_{e1} = \frac{\Sigma_{xe}}{N}$$

$$=\frac{483}{10}$$



= 48,3

 $M_{e2} = \frac{\Sigma_{xk}}{N}$ 

 $=\frac{496}{10}$ 

= 49,6

Based on the calculations above,  $Me_2 > Me_1$  (49.6 > 48.3) so it can be concluded that the lower passing exercise using the target wall by using a circle is better than the lower passing exercise using the target wall using a rope against the lower passing ability in volleyball games in students.

#### 4. **DISCUSSIONS**

Based on the results of the first hypothesis test shows that there is a significant influence between pre-test and post-test in the lower passing practice group using the target wall using the rope against the improvement of the accuracy of the lower passing in the game volleyball in students. From the results of the second hypothesis test showed that there was a significant influence between pre-test and post-test in the lower passing practice group using the target wall using a circle against the lower passing ability in the game of Volleyball in Students. This is achieved due to several factors including good sample motivation in doing exercises, long practice time, good mastery of techniques and mastery of techniques that are evenly distributed between samples.

Based on the results of the second hypothesis test showed that there is a significant influence between pre-rest and post-test on the group of lower passing exercises using the target wall using a circle against the ability to accuracy of passing down in the game of volleyball in students. This is achieved because several factors include the practice of passing the ball and the motivation of the samples in doing both forms of this exercise and running the program well. The practice of passing down using the target wall using a circle is preferable than the exercise of using the target wall using a rope.

Both are because from the third hypothesis only looks at which influence is greater than the two free variables, namely the practice of passing down using the target wall using ropes and the exercise of using the target wall using a circle against bound variables, namely the increase in the accuracy of passing down in volleyball games in students. Based on the explanation above, it is concluded that passing exercises using the target wall using circles and wearing ropes can be done to improve passing ability in the game of volleyball.

In the sport of volleyball, passing techniques are one of the basic methods that must be



mastered by every individual who needs the option to play volleyball. Since the passing procedure is a vital job in a volleyball match, the passing method is one of the basic strategies that is very multi-utilitarian. Because with the passing strategy we can do guarding (protection) as well as the plan for example types of attacks (Fitriansyah, 2019; Suzianto & Damanik, 2014). The achievement of the attack depends on great and terrible passing. If the ball is passed poorly, the set-upper will have difficulty in completing a good ball variation technique for a spiker or smasher.

The results of this study are supported by previous research by Fitriansyah (2019). The results showed that there was an influence of lower passing exercises with tools on the ability of passing techniques under the Yuso Gunadarma Yogyakarta volleyball club, with a value of 6,996 t count and a table of 2,160 with a significance value of p of 0.000. Because t calculates 6,996 > t table 2,160, the significance value is 0.000 < 0.05 and the percentage increase is 7.41%.

#### 5. CONCLUSIONS

Based on the results of research on the influence of exercises with the target wall media on the ability to pass under volleyball in students, it can be concluded including: (1) There is an influence of lower passing exercises using the target wall by using a circle against the ability to pass down in students; (2) There is an influence of lower passing exercises using the target wall by wearing ropes against the lower passing ability in students; (3) The results of the comparison of the two training methods of passing exercises using the target wall using ropes and lower passing exercises using circles. It was concluded that the lower passing exercise using the target wall by using a circle the result is better than the lower passing exercise using the target wall using a rope against the ability to pass down the volleyball in students. This research has implications with the recommendation of volleyball under-passing exercises using target walls using ropes and circles to improve the ability to pass down in students. Besides that, basically the practice of passing down using the target wall by using a rope can also be done as another variation so that students do not feel bored with the existing training methods, but if referring to the results of the study then the practice of passing down using the target wall by using a circle should be prioritized. For future researchers can use the results of this study as a reference, especially for similar research. Upcoming researchers are expected to develop methods with other exercises to improve the player's basic technical ability in volleyball, especially for lower passing ability.

#### Acknowledgment

The author expresses his gratitude to all those who have supported in the completion of this research.

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