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Improving underhand passing skills with the obstacle media method for boys' volleyball at SMA 1 Balaesang

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Abstract
This study is an experimental study that aims to determine the effect of two types of training models, namely direct passing and obstacle training using rope media on improving the skills of passing underfoot in male volleyball athletes at SMA 1 Balaesang. The research method used is two group design. The population of this study were all male volleyball athletes at SMA 1 Balaesang. And the sample in this study with a sample size of 30 people and the division of groups using ordinal pairing. The data analysis technique used is descriptive test analysis technique, data normality test, homogeneity test, and hypothesis test using SPPS at a significance level of 95%. Based on the results of data analysis, it can be concluded that: (1) There is an influence of direct passing training on improving the underhand passing skills of male volleyball athletes at SMA 1 Balaesang, the observation t value of 7.447 is greater than the table t value of 2.262 (7.447 > 2.62) with a significant value of 0.000 <α 0.05 (2) There is an influence of obstacles using rope media on improving the underhand passing skills of male volleyball athletes at BKMF SPARTA FIK UNM. The observation t value of 34.362 is greater than the table t value of 2.262 (21.385 > 2.262) with a significant value of 0.000 <α 0.05. (3) There is a difference between direct passing training and obstacles using rope media on improving the underhand passing skills of male volleyball athletes at SMA 1 Balaesang. It is known that the observation t value of 3.512 is greater than the t table of 2.101 (3.512 > 2.101) with a significant value of 0.003 < α 0.05. Obstacle training using rope media is more effective than direct passing training.

Keywords: Direct passing, obstacles using rope media, underhand passing skills

Introduction
Exercising is an activity that is continuously involved by moving all body parts, exercising can be done outdoors or indoors using furniture or without equipment in a regular manner (eye, hand and foot coordination). Exercising is a tool for maintaining health and fitness. In a prevalent way, what is meant by using physical fitness is physical fitness, meaning a person's ability to carry out activities or activities one day efficiently and not face significant boredom and fatigue as a result of which they still have a supply of energy to deal with additional work and activities (Moh Turi, 2020) [1]. Sports have a very important role in life (Widiastuti, 2015). [2] Sports can elevate a person's status, namely with various achievements achieved through championships and multi-events. Nowadays, the development of volleyball sports is growing along with the development of technology, especially in terms of game quality, such as in the sports of football, volleyball, and so on. Especially in the sport of volleyball, it is currently very popular with the public, especially students from elementary school to college. This is because volleyball has its own appeal, namely a dynamic game, full of challenges, and very strict rules. According to M. Yunus (2012:1) [3] "Volleyball has developed into a sport that is very popular with all levels of society, both teenagers and adults and according to experts, volleyball is currently listed as the second most popular sport in the world". Volleyball was created in 1895 by William G. Morgan from the United States. At first this game was called Mintonette, considering that this game was played by bouncing the ball (hitting the ball) before the ball touched the floor, so in 1896 by Prof. HT Halsted proposed the name of the game to be "Volley Ball". Volleyball in Indonesia has been known since 1928, brought by Dutch teachers who taught in secondary schools. Since PON II in Jakarta in 1951, until now volleyball has been one of the official sports competed in.

Volleyball is a sport that requires certain skills, namely being able to master game techniques. According to Subarjah (2013) [4], achievement is an accumulation of physical quality, technique, tactics, and psychological or mental maturity, so that these aspects need to be prepared comprehensively because one aspect will determine other aspects. The basic techniques of volleyball according to Sunardi and Deddy Whinata Kardiyanto (2015:15-47) [5] are "1) service technique, 2) passing technique, 3) Spike technique, 4) Block technique".

Volleyball is played by 2 teams on a field that is 18 meters long and 9 meters wide. Each team consists of 10 players including 6 core players and 4 reserve players. If there are less than 6 players on the field, the team in question will be considered to have lost (Susanto, in Suparman 2020) [6]. A similar opinion was expressed by Bachtiar (in Ilham and Oktafiranda 2021) [7] stating that volleyball is "a team sport, played by 2 teams, each team occupying a playing field area that is limited by a net".

One of the techniques in volleyball that plays a very important role is the Underhand Pass, because it plays a central role in supporting attacks to gain a victory. The imperfection of the Underhand Pass causes the attack to be imperfect, and does not support the defense. As stated by IMG Arta Mahardika, Marhaeni, & Widiartini (2015: 3) [8] in volleyball the percentage of underhand passing is very high, which is approximately 80% when the game is in progress. So in this study, the focus of attention is the Underhand Pass. Underhand passing is an effort by a volleyball player by making a pass that aims to pass the ball to his teammate using the arm.

Paired underhand passing exercises using rope obstacles are a form of paired underhand passing exercises through a stretched rope. So players who do the underhand pass learning must pass the ball over the stretched rope. The detailed form of the implementation of the learning is: players stand face to face, each facing the rope with a distance of 3 meters. One player holds the ball, then tosses the ball high towards his partner using the underhand passing technique. The ball that is tossed must pass over the stretched rope. Along 9 meters and it is attempted to be received well by his partner, and so on. The direct training in question is a form of paired passing training without any obstacles. The detailed form of the implementation of the learning is that the players stand face to face with a distance of 3 meters. One player holds the ball, then throws the ball towards his partner and makes an underhand pass through the obstacles that have been set.

Based on the results of the author's observations that have been carried out at the SMA 1 Balaesang volleyball club, the author saw that most athletes did less accurate underhand passes. This is because some athletes were late in moving their feet so that their hands did not touch the ball properly. This resulted in the ball not going to the target or setter. In addition, some athletes were also not in a ready position to do underhand passes. Mistakes that are often made by some athletes are that the hand position is too low or too high so that the passing results are less stable. In this regard, the author wants to conduct research on the Effect of Direct Underhand Passing Training and Obstacles Using Rope Media on Improving Underhand Passing Skills in Male Athletes of Bkmf Sparta Volleyball Fik Unm.

Materials and Methods

In this study, the researcher used the experimental method. One of the important tasks in research is to determine whether or not there is a causal relationship between phenomena and to draw laws about the causal relationship. Experimental research is a research that is always carried out with the intention of seeing the effects of a treatment that has been given in a certain time (Arikunto, 2009:9) [9].

The design used in this study is the "Two Groups Pretest-Posttest Design", which is a research design that includes a pretest before being given treatment and a posttest after being given treatment, thus it can be known more accurately, because it can be compared with the one held before being given treatment.

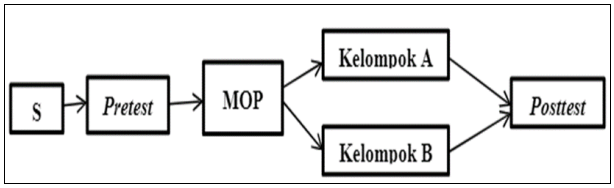

Fig 1: Research Design Image "Two Groups Pretest-Posttest Design"

- **P:** Research Population.
- **S:** Sample.
- **Pretest:** Initial test before treatment.
- **OP:** Ordinal Pearing.
- **K-1:** Group 1 (direct practice group).
- **K-2:** Group 2 (training group using rope media).
- **Posttest:** Bottom Passing Final Test.

According to Purwanto (2018), [10] research instruments are basically tools used to collect data in research. All research involves collecting data to test the hypotheses that have been set in the research. Generally, researchers use instruments to collect research data. The instruments used in the research are passing tests / lower passing tests, according to Nurhasan H. and Hasanudin D. (2013, p. 222) [11]

- **Test name:** 60 seconds test of passing under the wall (Braddy Wall Volley)
- **Validity:** 0.86
- **Reliabilitys:** 0.93

1. **Equipment required:**

- Stopwatch
- Meter
- Wall
- volleyball

2. **Implementation instructions**

- Testee stands under the target square
- Once the signal to start the test is given, the stopwatch is started, and the ball is thrown from a free place.
- After the ball bounces back, the ball is passed to the wall towards the target box.

3. **How to score**

- The ball is legally in play according to the rules of volleyball for one minute.
- The number of valid touches with the ball hitting the wall in the target box or the ball hitting the target box line.

4. **Not numbered**

- The ball is caught or cannot be controlled.
- The ball hits the floor, starting again with a throw.
- Throws do not count

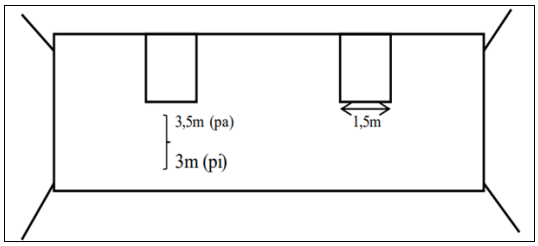

Fig 2: Field for Passing Test Lower

The division of research groups, the author uses ordinal pairing which can be seen in table 1.

Table 1: Division of Ordional Pairing Groups

Group A	Group B
1	2
4	3
5	6
8	7
9	10
12	11
13	14
16	15
17	18
20	19

The division of experimental groups using direct training and obstacle methods is based on the results of conducting an initial underhand passing test ranked from the highest to the lowest level, then subjects with equivalent abilities are paired into groups 1 and 2. This ordinal pairing is only done on continuum variables, for example: the best results are placed in group one, the second best results are still placed in group two, the third best results are still placed in group two and so on.

Results & Discussion

The results of this study were obtained to determine the existence of independent variables, either only in one variable or more (stand-alone variables) without making comparisons and looking for the relationship of the variable with other variables Sugiyono (2009: 35) [12]. From the above understanding, it can be concluded that the descriptive analysis method with a quantitative approach is a method that aims to describe systematically and factually the facts and relationships between the variables investigated by collecting data, processing, analyzing, and interpreting data in statistical hypothesis testing.

Based on the results of data processing, the results of the descriptive analysis can be seen in the following table:

Table 2: Results of descriptive analysis test

Group	Amount	Average	Middle Value	Lowest	Highest	Standard Deviation
Pretest A1	639	42.60	43.00	32.00	52.00	5.40
Posttest A2	678	45.20	46.00	35.00	55.00	5.27
Pretest B1	632	42.13	43.00	30.00	49.00	5.14
Posttest B2	711	47.40	48.00	35.00	54.00	5.08

Before getting the results of the hypothesis test, first look for the results of the normality test. The Normality Test is a test that is carried out with the aim of assessing the distribution of data in a group of data or variables, whether the distribution of the data is normally distributed or not. The following is a table of normality test results.

Table 3: Results of the normality test using the results from

Group	Kolmogorov-Smirnova		
	Statistics	Degree of Freedom	Significance
Pretest A1	0.182	15	0.197
Posttest A2	0.205	15	0.091
Pretest B1	0.156	15	0.200*
Posttest B2	0.214	15	0.064

From the results of the table above, it is concluded with Kolmogorov-Smirnov that the results of the experimental pretest group (A1) obtained a result of 0.182 with a total value of 0.170. The experimental posttest group (A2) obtained a result of 0.205 with a total value of 0.091. While the pretest value of group (B1) obtained a result of 0.156 with a total value of 0.200. Next, the posttest value of group (B2) obtained a result of 0.214 with a total value of 0.064. Therefore, the four types of data groups above were obtained greater than the P value> 0.05, then the data as a whole is normally distributed.

In the study there are 3 (three) types of statistical hypotheses that are to be tested. Summary of the results of the average difference test before and after treatment in both research groups, both the group that practiced underhand passing without obstacles (A1) and the group that practiced underhand passing with obstacles (B2), the results of the difference test can be seen in the following table summary:

Table 4: Hypothesis test results

Testing	Before and After Differences					t	Degree of Freedom	Trust (2 stars)
	Mean	Standard Deviation	Std. Error Mean	95% Confidence Difference				
				Under	On			
Hypothesis 1 (A1-A2)	2.6000	1.3523	0.3492	1.85115	3.34885	7,447	14	0.000
Hypothesis 2 (B1-B2)	5.2667	0.5936	0.1533	4.93793	5.59540	34,362	14	0.000
Hypothesis 3 (A2-B2)	2.2000	2.4261	0.6264	0.85650	3.54350	3,512	14	0.003

Conclusion

Based on the results of the field trial and the results of the researcher's discussion, it can be concluded that there is a significant and meaningful effect of underhand passing training without using rope obstacles on the underhand passing ability of volleyball in SMA 1 Balaesang athletes, There is a significant and meaningful effect of underhand passing training using rope obstacles on the underhand passing ability of volleyball in SMA 1 Balaesang athletes, There is a significant and meaningful difference in the effect of underhand passing training without using rope obstacles with underhand passing training using rope obstacles on the

underhand passing ability of SMA 1 Balaesang volleyball athletes, with the results of statistical calculations showing that underhand passing training with obstacles is better than underhand passing training that does not use obstacles.

Acknowledgements
Based on the results of the field trials and the results of the researcher's discussion, it can be suggested that:

1. For volleyball coaches and trainers, it is recommended that in an effort to improve the ability of underhand passing in volleyball in athletes, one alternative is underhand passing practice using obstacles that are measured, planned and well-programmed.
2. The management of the Balaesang 1 High School Volleyball Club needs to provide training facilities and infrastructure at the training location, so that problems that could hinder the training process do not occur.
3. For those interested in conducting further research, it is recommended to involve other variables that are relevant to this research as well as a wider population and sample.

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Appendix
T-Test

Table 1: Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	A2	45.2000	15	5.26715	1.35997
	A1	42.6000	15	5.39577	1.39318
Pair 2	B2	47.4000	15	5.08218	1.31221
	B1	42.1333	15	5.13902	1.32689
Pair 3	B2	47.4000	15	5.08218	1.31221
	A2	45.2000	15	5.26715	1.35997

Table 2: Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	A2 & A1	15	.968	.000
Pair 2	B2 & B1	15	.993	.000
Pair 3	B2 & A2	15	.891	.000

Table 3: Paired Samples Test

		Paired Differences					t	DF	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	A2 - A1	2.60000	1.35225	.34915	1.85115	3.34885	7,447	14	.000
Pair 2	B2 - B1	5.26667	.59362	.15327	4.93793	5.59540	34,362	14	.000
Pair 3	B2 - A2	2.20000	2.42605	.62640	.85650	3.54350	3,512	14	.003