



The Effect of Forward Hand Grip Training on Overhead Passing Ability in Volleyball Among Extracurricular Participants at SMP Negeri 1 Hantara

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Abstract

This study aims to analyze the effect of forward handgrip training on the overhead passing ability of volleyball players in the extracurricular program at SMP Negeri 1 Hantara. Overhead passing is a fundamental technique in volleyball that requires finger strength to control and direct the ball properly. The research method used was quantitative with a one-group pretest-posttest design, in which the students' overhand passing skills were tested before and after being given training using handgrip equipment. The research sample consisted of 15 male students who participated in volleyball extracurricular activities, selected using purposive sampling. Data were collected through an overhand passing skill test, then analyzed using the Paired Sample T-Test to measure significant improvement after training. The results of this study are expected to show that forward handgrip training has a positive effect on improving overhand passing skills.

Keywords: *Forward Handgrip, Overhead Passing*

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INTRODUCTION

Physical education and sports are an integral part of a comprehensive education system. The goal is to develop students' potential through physical activity (Gunadi, 2018). Andara et al (2021) Each player has specific skills, namely as a hitter, setter, and libero. Khotimah (2020) Physical education is oriented towards improving fitness and health and shaping individuals who are athletic, courageous, disciplined, cheerful, and never give up. Volleyball is the fourth most popular sport in Indonesia (Mangolo et al., 2025).

Kuntjoro (2020) Sports are physical and mental activities that are useful for maintaining and improving a person's health. Volleyball is a team sport played by two opposing teams with the aim of hitting the ball over the net into the opponent's court to score points. Volleyball is played using the hands to bounce or volley the ball. Lubis & Witarsyah (2020) Volleyball is a team sport that requires teamwork. The techniques in volleyball consist of serving, passing, smashing, and blocking. One of the basic techniques that plays a very important role in volleyball is passing. Passing is a technique in volleyball that aims to pass the

ball to a teammate, to be played again and can also be said to be the first step in organizing an attack on the opposing team.

Based on the results of the researcher's observations at SMP Negeri 1 Hantara, it is known that the basic motor skills in overhead passing techniques of students who participate in volleyball extracurricular activities are still relatively low. Most students are not yet able to perform basic overhead passing techniques properly and correctly according to the principles of proper movement. In addition, the training process that has been carried out so far is considered ineffective in improving students' abilities. Therefore, it is necessary to select appropriate training models and learning methods that are in line with the characteristics and skill development levels of students in order to optimize learning outcomes.

Overhead passing is very important in volleyball because it is the first step in setting up an attack. One of the key factors in successful overhead passing is the strength and coordination of the hand grip (Satria, 2019). Based on the results of observations that have been conducted, researchers offer a solution to improve mastery of overhead passing techniques through the application of a structured and effective training process. Fun exercises with a high level of creativity are considered capable of creating a variety of exercise forms to avoid boredom and increase student motivation. Therefore, this study proposes an overhead passing training model using handgrips. The application of this training method is expected to attract students' interest and increase the strength of their fingers to support the basic motor skills of overhead passing techniques. Urahman et al (2019) Hand grip in volleyball is a type of exercise that aims to improve the ability of muscles to perform a single contraction against resistance or load.

METHOD

This study used a quantitative approach through a one-group pre-test and post-test research design. The population and sample in this study were 15 male volleyball athletes from SMP N 1 Hantara, West Java. Data collection techniques used questionnaires with research instruments using skill tests in volleyball. Data analysis techniques were through normality tests, homogeneity tests, and hypothesis tests.

RESULTS AND DISCUSSION

Result

Based on the results of research conducted on the Forward Hand Grip Training Model on Overhead Passing Skills in Volleyball among participants in the extracurricular program at SMP Negeri 1 Hantara to determine the extent to which this training method influences the improvement of overhead passing skills, which is one of the important basic techniques in volleyball. The following data includes the results of the pretest and posttest, which have been analyzed using statistical tests to see if there is a difference in the students abilities.

Tabel 1. Pre-test and Post-test Passing Results

No	Name	Pretest	Posttest
1	Ridho	15	17
2	Guruh	14	17
3	Fathan	17	19
4	Dafa	13	15
5	Riski	16	19
6	Azis	14	18
7	Geris	17	20
8	Putra	18	23
9	Rendi	14	17
10	Romi	20	23
11	Abi	18	21
12	M Dafa	25	27
13	Andra	20	24
14	Erpan	19	23
15	Agil	15	18
	Rata – rata	17,00	20,07
	Minimal Skor	13	15

The table above shows the pretest and posttest results for volleyball passing skills among 15 participants in the extracurricular program at SMP Negeri 1 Hantara, who constituted the population and sample for this study. Based on the average pretest and posttest results, it can be seen that the posttest scores were higher than the pretest scores.

The following table shows the results of the descriptive and statistical analysis of the pretest and posttest passing tests for participants in the volleyball extracurricular activity at SMP Negeri 1 Hantara.

Tabel 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest	15	13	25	17,00	3,162
Posttest	15	15	27	20,07	3,327
Valid N (listwise)	15				

The data in the table above shows that the face pass wall-volley of the Extracurricular Volleyball Participants of SMP Negeri 1 Hantara had a pretest average score of 17.00 and a posttest average score of 20.07 after being given (treatment) forward handgrip training for 10 sessions.

The Shapiro Wilk test for data distribution normality is an effective and valid normality test method because the sample size is less than 30. In this test, the data is considered normal if the sig value is > 0.05 . The following are the results of the pretest and posttest passing scores:

Tabel 3. Normality Test

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	,136	15	.200*	,914	15	,157
Posttest	,159	15	.200*	,945	15	,455

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on the data above, it is known that the sig value in the pretest is 0.157 and in the posttest is 0.455. With this data, it is known that the sig value is > 0.05 , so the data is considered normal.

Homogeneity testing is conducted to determine the similarity of variations in the research population. The criteria for data collection are if $p \text{ sig} > 0.05$ or $t \text{ count} < t \text{ table}$, which means that the data can be considered homogeneous.

Tabel 4. Test of Homogeneity of Variance

		Levene	df1	df2	Sig.
		Statistic			
Result	Based on Mean	,265	1	28	,611
	Based on Median	,126	1	28	,726
	Based on Median and with adjusted df	,126	1	27,730	,726
	Based on trimmed mean	,217	1	28	,645

Based on the results of the table above, the pretest and posttest values show a sig Based on Mean result of 0.611, where a result is said to be homogeneous if sig > 0.05. From this data, it can be concluded that the data is homogeneous because the sig p value of 0.611 > 0.05. Hypothesis testing in this study was conducted using the Paired Sample Test to ensure that the data being compared came from the same group of subjects. Data was considered to have an effect if the hypothesis test value was less than 0.05 (p<0.05).

Tabel 5. Paired Sample Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest - Posttest	-3,067	,884	,228	-3,556	-2,577	-13,440	14	,000

Based on the paired samples test of the pre-test and post-test scores, the sig value (2-tailed) is 0.000. Because the sig value (2-tailed) is 0.000 < 0.005, there is a significant difference. Therefore, H0 is rejected and Ha is accepted, meaning that there is an effect of the forward hand grip training model on the ability to pass a volleyball among participants in the extracurricular activities at SMP Negeri 1 Hantara.

Discussion

Nugroho (2021) The game of volleyball was first introduced by William G. Morgan in Holyoke, Massachusetts, United States, on February 9, 1895. Initially, the game was called Mintonette. Volleyball is played by two teams, each consisting of six players. Yanto & Irsyada

(2025) Volleyball is a sport played by two teams on a court separated by a net. Understanding how to play volleyball is very important. Some of the basic techniques that must be mastered include serving, passing, blocking, and smashing. One of these techniques is the overhand pass, which is how to pass or receive the ball with both hands above the head at the same time. This technique requires muscle strength in the fingers. Adi & Indarto (2021) Of the many competitive sports, volleyball is one that is widely enjoyed by many Indonesians. Volleyball has a number of rules related to technical matters, violations, and scoring (Bumburo et al., 2023). Keswando et.al (2022) To acquire good or perfect basic techniques, volleyball players need to master them by practicing regularly and following a proper program.

Based on the results of the study, it can be concluded that the forward hand grip training model has a significant effect on improving the overhead passing ability of participants in the extracurricular volleyball program at SMP Negeri 1 Hantara. Descriptive statistics show that the average pretest score of participants was 17.00 with a standard deviation of 3.162, while the average posttest score increased to 20.07 with a standard deviation of 3.327. This indicates that there was an increase in the average score of 3.07 points after being given treatment in the form of training. This increase shows that participants experienced improvement in their overhead passing skills after participating in the training designed in this study. This is reinforced by the smaller standard deviation in the posttest, which indicates that the distribution of posttest results is more consistent than the pretest. Based on the Levene test results, the significance values based on the mean are 0.611, the median is 0.726, and the trimmed mean is 0.645. All of these values are above the significance limit of 0.05, which means that the variance between data groups is homogeneous. This is important to ensure that the basic assumptions in parametric analysis are met, particularly in the use of the t-test. Thus, the paired sample t-test can be used validly to test the difference between the pretest and posttest. The t-test produced a t-value of -13.440 with $df = 14$ and a significance value (p) < 0.000 , indicating that the difference between the pretest and posttest is statistically significant. Since $p < 0.05$, the null hypothesis (H_0) stating that there is no difference is rejected, and the alternative hypothesis (H_1) is accepted. This means that the exercises given had a significant effect on the participants' passing ability.

Sulistiadinata (2020) In general, volleyball requires good agility, because volleyball is a sport with a fast and dynamic tempo. Patamani (2020) Playing volleyball provides many benefits, including developing good posture in terms of anatomy, physiology, health, and physical abilities. In addition, spiritual benefits are also evident through psychological development, personality, and character growth in line with societal demands.

CONCLUSION

Based on the review of previous studies and the results of this research, it can be concluded that volleyball is a dynamic sport introduced by William G. Morgan in 1895, which requires mastery of basic techniques such as serving, passing, blocking, and smashing. Among these, the overhead pass is an essential skill that demands finger strength and proper training. Mastery of these techniques can only be achieved through consistent practice and structured training programs. The findings of this study demonstrate that the *forward hand grip* training model has a significant effect on improving students' overhead passing ability in the extracurricular volleyball program at SMP Negeri 1 Hantara. Statistical analysis shows an increase in the average score from 17.00 (pretest) to 20.07 (posttest), with a 3.07-point improvement that is statistically significant ($t = -13.440$; $p < 0.000$). The homogeneity test further confirms that the data meet the assumptions for parametric testing, validating the use of the paired t-test. Therefore, it can be concluded that the *forward hand grip* training model is effective in enhancing technical volleyball skills, particularly overhead passing. This supports the view that systematic and well-designed training programs are crucial in developing both the physical and psychological benefits of volleyball for students.

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