



## **The Influence of Drill Defense Training on Improving Underhand Passing Skills in Volleyball at the Extracurricular Program Of SMA Negeri 1 Lebakwangi**

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### **Abstract**

This study aims to improve volleyball players' forearm passing skills through the implementation of drill defense training. The main issue addressed is the low effectiveness of players in receiving attacks from opponents, which negatively impacts the overall team performance. This research employed an experimental method with a one-group pre-test and post-test design using a quantitative approach. The subjects were female students participating in the volleyball extracurricular program at SMA Negeri 1 Lebakwangi, selected through purposive sampling. The Brady Volleyball test was used to assess forearm passing ability before and after the drill defense training. Data analysis was conducted using the Paired Samples T-Test, along with normality and homogeneity tests to ensure data validity. The results showed a statistically significant improvement with a significance value of  $p < 0.05$ . The data were normally distributed and homogeneous. Drill defense training proved effective in enhancing forearm passing skills and is recommended to be implemented regularly in training programs.

**Keywords:** *Drill Defense, Forearm Passing, Volleyball*

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## **INTRODUCTION**

Sports are one of the most effective strategies for building a healthy physique and maintaining physical fitness. In the context of education, sports not only serve to enhance physical fitness but also function as a means of character building, discipline, and the development of students' social skills. Sports and health are essential needs for everyone, as every individual naturally desires to be healthy—no one wishes to be ill or have their health compromised (Salahudin & Rusdin, 2020). One of the most popular and widely favored sports among the general public and students is volleyball. (Fanani, 2020), Volleyball is a team sport played by a group of six players on each side. Two teams are required for the game to take place in a competitive setting. The main objective of the game is to pass the ball from one player to another and attempt to land it in the opponent's court. If a team fails to return the ball, they are considered to have lost the rally. Volleyball offers numerous benefits, including

fostering teamwork, improving concentration, and enhancing physical endurance. However, the effectiveness of playing volleyball is highly influenced by the mastery of fundamental techniques, one of which is the forearm pass (underhand pass). This technique is crucial as it serves as the starting point for an effective offensive play.

Volleyball is a team sport played by two opposing teams, each consisting of six players. Each team is allowed up to three touches while the ball is on their side of the court. In this game, the ball is hit into the air over the net with the objective of landing it in the opponent's court to score points and achieve victory (Susila, 2021)

In volleyball, there are several fundamental techniques that must be mastered, including serve, passing, smash, blocking, and receive. Each of these techniques has a different role in the game. The serve is used to start the match; passing is aimed at receiving or controlling the ball coming from the opponent or a teammate; the smash is an attacking technique directed at the opponent's court with the goal of scoring points or at least making it difficult for the opponent to return the ball; blocking is performed near the net to stop the opponent's attack and can also serve as a counter-attack; while receive functions to prevent the ball from touching the floor on one's own side of the court (Astuti et al., 2020).

Although volleyball is one of the most favored extracurricular activities at SMA Negeri 1 Lebakwangi, the researcher found that most students still struggle with performing the basic forearm passing technique. This is evident in improper body posture when receiving the ball, suboptimal arm coordination, as well as a lack of strength and ball control. These issues result in less effective offensive plays and an increase in errors during the game, especially when responding to attacks or serves from the opposing team.

Underhand passing is one of the fundamental techniques that greatly influences both defense and the development of attacks in the game. Considering that underhand passing is a basic skill, it should be the first aspect to be focused on and trained, so that players can progress and develop other techniques to improve their overall performance (Anggraeni et al., 2022).

Several previous studies have discussed the importance of mastering basic techniques in volleyball. (Astuti et al., 2020) stated that fundamental skills such as serving, passing, spiking, and blocking play a crucial role in creating an effective game. Among these techniques, the forearm pass (underhand pass) is a fundamental skill that every player must master to ensure the flow of the game remains controlled and uninterrupted.

Service is an important aspect of volleyball. The serve functions as the starting point of the game and is also considered the initial step in launching an attack. A well-executed serve

greatly influences the overall flow of the match, as it can make it difficult for the opponent to receive the ball, thereby helping the team to score points (Achmad et al., 2020).

Blocking is the main defense in stopping the opponent's attack. The success of a block depends greatly on how high and how far the hands can reach the ball being hit by the opponent. In volleyball, the blocking technique can be performed at varying speeds, either accelerated or slowed down (Pardiman et al., 2021). Passing is a technique used to receive the ball and direct it toward the desired target. This technique is a fundamental skill in volleyball and must be understood by anyone who wants to play the game (Elisanti et al., 2022).

Mastering the basic techniques in volleyball is a crucial aspect that must be learned in order to play effectively. One of the fundamental skills that plays a significant role in the game is passing, which is divided into two types: underhand passing and overhead passing (Aknasari et al., 2021). (Irwanto, 2021), emphasized that without proper mastery of the forearm passing technique, a team will not be able to build an effective offense. This is supported by the findings of (Ramadhan et al., 2019), who explained that the process of learning volleyball in schools should not only focus on physical activity but also on understanding correct techniques so that students can improve the quality of their gameplay.

The drill training method has been widely used in the sports world as an effective approach to improving specific technical skills. According to (Daulay & Nasution, 2022), the drill method focuses on structured and intensive repetition of movements to strengthen technical mastery, including in volleyball. However, previous studies have generally not specifically examined how the drill defense method affects forearm passing skills in the context of extracurricular activities at the secondary school level, particularly at SMA Negeri 1 Lebakwangi.

Based on previous studies, it is known that drill training has a significant impact on the mastery of basic sports techniques. However, these studies tend to be general in nature and have not specifically examined the impact of drill defense training on forearm passing skills among high school volleyball extracurricular participants. This indicates an empirical gap, where an approach that has been theoretically proven has not yet been fully implemented or tested for its effectiveness in the specific context of schools

Defense is a system used to counter the opponent's attacks. Repeated practice of defensive skills is the primary method for players to understand how to play defensively and to improve ball control necessary for executing an effective counterattack (Zulkarnain et al., 2022).

The main concepts in this study are forearm passing in volleyball and drill defense training. Forearm passing is a fundamental technique used to receive the ball from opponents or teammates and serves as the foundation for offensive plays. This technique requires proper body positioning, coordinated movements, and good ball control (Irwanto, 2021). Drill defense training is a repetition-based training method designed to improve players' defensive abilities and reactions to opponents' attacks (Daulay & Nasution, 2022).

The study by (Simanungkalit, 2016) also emphasizes the importance of correct basic techniques, including body positioning and arm movement when performing a forearm pass. Meanwhile, (Intan Oktaviani Agustina et al., 2023) explain that extracurricular activities such as volleyball have a significant impact on the development of students' talents and skills, especially when supported by appropriate training.

This study was conducted at SMA Negeri 1 Lebakwangi, a school equipped with adequate sports facilities, including those for volleyball. Volleyball extracurricular activities are quite popular, especially among female students. However, challenges in mastering passing techniques are still evident, as passes often miss the target and fail to reach their intended destination, particularly when receiving serves or attacks from opponents.

To address this issue and achieve optimal results in underhand passing technique, focused training is required. One commonly used method is the drill method. Drill training is useful for improving technical skills in volleyball. According to (Suharjana, 2020), a drill is an effort to emphasize a specific movement through continuous repetition in order to achieve efficiency and effectiveness in the targeted technique. Meanwhile, (Raihanati & Wahyudi, 2021) explains that the drill method is a form of training carried out seriously with the aim of strengthening movement associations and optimizing skills until they become permanent habits.

Thus, through the drill defense approach, this study aims to provide new contributions to the training strategies for basic volleyball techniques within the educational environment, particularly in school extracurricular activities.

## **METHOD**

The experimental method is used as the procedure in this study. Experimentation is a part of quantitative research methods that is applied to identify the effect of the independent variable (treatment) on the dependent variable under controlled conditions (Alamsyah et al., 2022)

The experimental design used was a one-group pre-test post-test design, which involves only one group without a control group. In this design, measurements are taken before (pre-

test) and after (post-test) the treatment is administered. The purpose is to determine the extent of changes resulting from the treatment. This model was chosen because it can provide a clear picture of the effects of the treatment, even without a comparison from another group.

In quantitative research, the population refers to the general scope that serves as the basis for making generalizations. This population consists of objects or subjects that possess specific traits and characteristics determined by the researcher to be studied and used as the foundation for drawing conclusions (Suriani et al., 2023).

One of the significant limitations of this study lies in the relatively small sample size, involving only 15 female students out of a total of 30 participants in the volleyball extracurricular program at SMA Negeri 1 Lebakwangi, consisting of 15 male and 15 female students. Although the sample was selected purposively based on predetermined criteria aligned with the focus of the study, the limited number of participants may affect the external validity or generalizability of the findings.

A small sample size tends to restrict the ability to generalize the results to a broader population. This issue is particularly relevant because the study participants were limited to female students actively involved in the girls' volleyball extracurricular program, without the inclusion of a comparison or control group. This condition may also increase the risk of internal bias, as there is no cross-verification of the effects of the investigated variables through intergroup comparisons.

Furthermore, the limited number of subjects may reduce the statistical power of the data analysis, which could ultimately impact the accuracy of result interpretation. Therefore, it is recommended that future research consider employing a larger sample size and adopting an experimental design that includes a control group to obtain a more comprehensive and valid understanding of the effects being studied.

The instrument used in this study was a forearm passing skill test in volleyball, which is a modification of the Brady Wall Volley Ball Test. This test was used to assess the accuracy of the female students' forearm passes. The target in the test was a 152 cm square marked on a wall, positioned at a height of 350 cm from the floor. The test was conducted using the forearm passing technique with both hands. Each time the ball was successfully bounced and hit the target according to the criteria, the participant received one point. The test duration was one minute, and each participant was given two attempts. The best score from the two trials was taken as the final result.

The test procedure began with providing instructions to the participants regarding the steps of the test to avoid errors and ensure uniform understanding. After that, the participants

were asked to warm up before starting the test. During the test, participants stood facing the wall and bounced the volleyball using the forearm pass into the target area for one minute. If the ball dropped, participants were allowed to retrieve it and continue passing until the time ran out. The equipment used in this test included a volleyball, a wall as the target, a stopwatch, and writing tools to record the results.

Data collection was carried out through the results of the pretest and posttest using the same instrument. All data obtained were then analyzed using the Statistical Package for the Social Sciences (SPSS) application. The data analysis stages included a normality test to examine the data distribution, a homogeneity test to assess the equality of variances, and a hypothesis test using the Paired Sample t-test to determine significant differences between pretest and posttest results. This analysis technique was chosen because it is suitable for comparing two paired data sets from the same group before and after treatment. Therefore, the results of this analysis are expected to provide an accurate picture of the effect of the treatment on improving forearm passing skills in volleyball.

## **RESULTS AND DISCUSSION**

### **Result**

This chapter presents the research findings and discussions related to the established objectives. The data presented include the test results from the beginning (Pretest) to the final test (Posttest) of the study. This research involved fifteen female students from SMA Negeri 1 Lebakwangi who participated in volleyball extracurricular activities as respondents. The purpose of analyzing these results is to determine whether there is a significant difference in skill transfer ability among the students who underwent drill defense training. The treatment was conducted over sixteen sessions, with a frequency of three training sessions per week.

Based on the statistical analysis results presented in Table 4.3, after the implementation of the drill defense method to improve the ability and accuracy of forearm passing, it was found that the pretest scores of the 15 respondents were above 12. Following the training and the posttest, an improvement in forearm passing skills that met the target was observed. This is indicated by the positive difference in scores between the posttest and pretest, ranging from 1 to 8 points among all respondents. The overall statistical description of the 15 respondents is as follows.

**Table 1.** Statistical Description of Respondents' Results

| <b>Mark</b>          | <b>Pretest</b> | <b>Posttest</b> |
|----------------------|----------------|-----------------|
| <b>Mean</b>          | 26,67          | 31,20           |
| <b>Median</b>        | 23,00          | 29,00           |
| <b>Mode</b>          | 15             | 28              |
| <b>Std.Deviation</b> | 10,465         | 9,879           |
| <b>Minimum</b>       | 12             | 16              |
| <b>Maximum</b>       | 43             | 47              |
| <b>Amount</b>        | 400            | 468             |

Based on the descriptive statistical analysis of the pretest and posttest data on forearm passing skills of female volleyball extracurricular participants at SMA Negeri 1 Lebakwangi, the pretest stage showed that the average score achieved by the participants was 26.67, with a median of 23.00, a mode of 15, and a standard deviation of 10.465. The lowest score obtained in the pretest was 12, while the highest score reached 43. After being given treatment in the form of forearm passing technique training using the drill defense method, there was an improvement in the posttest results. The average posttest score increased to 31.20, with a median of 29.00, a mode of 28, and a standard deviation of 9.879. The range of posttest scores also showed improvement, with the minimum score rising to 16 and the maximum score reaching 47. The increase in the average score by 4.5 points between the pretest and posttest indicates development in forearm passing ability with greater accuracy.

The normality test aims to determine whether the data distribution to be analyzed follows a normal distribution or not. In this case, the Shapiro-Wilk method was used as the testing tool with the assistance of IBM SPSS software version 26.

**Table 2.** Normality Test Results

|          | <b>Tests of Normality</b>       |    |       |              |    |      |
|----------|---------------------------------|----|-------|--------------|----|------|
|          | Kolmogorov-Smirnov <sup>a</sup> |    |       | Shapiro-Wilk |    |      |
|          | Statistic                       | df | Sig.  | Statistic    | df | Sig. |
| Pretest  | .170                            | 15 | .200* | .925         | 15 | .228 |
| Posttest | .148                            | 15 | .200* | .945         | 15 | .456 |

Using SPSS version 26, the normality test was conducted using the Shapiro-Wilk method. The test results showed that both the pretest and posttest data had significance values above 0.05, specifically 0.228 and 0.456, respectively. Based on this, it can be concluded that

both data sets are normally distributed. The basic principle in the Shapiro-Wilk method states that data are considered not normal if the p-value (sig) is less than 0.05, and considered normal if the p-value is greater than 0.05. The next step is to perform the homogeneity test.

**Table 3.** Test Of Homogeneity

| <b>Test of Homogeneity of Variance</b> |  |                  |     |        |      |
|----------------------------------------|--|------------------|-----|--------|------|
| Data                                   |  | Levene Statistic | df1 | df2    | Sig. |
| Based on Mean                          |  | .154             | 1   | 28     | .697 |
| Based on Median                        |  | .117             | 1   | 28     | .735 |
| Based on Median and with adjusted df   |  | .117             | 1   | 27.794 | .735 |
| Based on trimmed mean                  |  | .154             | 1   | 28     | .698 |

Based on the results of the homogeneity test, a significance value of 0.698 was obtained, which exceeds the threshold of 0.05. This indicates that the variance between the two groups, namely the pretest and posttest, does not differ significantly, meaning the variances are homogeneous. Since both groups have uniform variances, the data analysis in this study can proceed to the next stage without the need for adjustments related to variance differences.

After completing the normality and homogeneity tests, the next step is to conduct a hypothesis test using the Paired Samples t-Test. This test was chosen because the study involves one sample group experiencing two different conditions, namely before and after receiving the treatment. The purpose of this test is to determine whether drill defense training has a significant effect on improving forearm passing skills in volleyball among students at SMA Negeri 1 Lebakwangi.

**Tabel 4.** Hasil Uji Peired Samples Test

| <b>Paired Samples Test</b> |       |                |                 |                                           |       |       |    |                 |
|----------------------------|-------|----------------|-----------------|-------------------------------------------|-------|-------|----|-----------------|
| <b>Paired Differences</b>  |       |                |                 |                                           |       |       |    |                 |
|                            | Mean  | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference |       | t     | df | Sig. (2-tailed) |
|                            |       |                |                 | Lower                                     | Upper |       |    |                 |
| Pretest                    |       |                |                 |                                           |       |       |    |                 |
| Posttest                   | 4.533 | 1.846          | .477            | 5.556                                     | 3.511 | 9.509 | 14 | .000            |

Based on the data in Table 4.5, a significance value (Sig. 2-tailed) of 0.00 was obtained, which is below the significance threshold of 0.05. Referring to the decision criteria in the Paired Samples t-Test, this result indicates that the alternative hypothesis ( $H_a$ ) is accepted and the null hypothesis ( $H_o$ ) is rejected.

This study supports the finding that the drill training method is an effective approach to improving movement techniques in volleyball. The drill method involves providing repeated practice to athletes until they master specific skills. Through consistent training using this method, habits are formed that help athletes achieve better mastery of techniques (Dasar et al., 2024)

Thus, it can be concluded that the drill defense training method has a significant and effective impact on improving forearm passing skills among students participating in the volleyball extracurricular activities at SMA Negeri 1 Lebakwangi.

## **Discussion**

This research was conducted in the environment of SMA Negeri 1 Lebakwangi, involving female students who actively participate in the volleyball extracurricular activities as the research subjects. The main objective of this study is to evaluate the effectiveness of the drill defense training method in improving the underhand passing technique in volleyball. Additionally, the study aims to determine whether there is a significant difference in underhand passing ability before and after being given the drill defense training treatment.

The research process began with administering a pretest to all participants using the Brady Volleyball Test instrument. This test was used to measure the students' initial ability in performing underhand passes, serving as a baseline to compare the results after the treatment. Following the initial assessment, 15 participants underwent a series of training sessions designed with the drill defense method over 16 meetings. This training focused on strengthening defensive techniques, particularly in anticipating opponents' attacks using effective and well-directed underhand passes.

After all training sessions were completed, the researcher conducted a posttest using the same instrument to obtain data on the training outcomes. The posttest results showed a significant improvement in underhand passing skills compared to the pretest results. This indicates that the drill defense training method has a positive impact on students' underhand passing skills.

Data analysis continued with a series of statistical tests. A normality test was conducted to determine whether the posttest data were normally distributed. The results showed a significance value of 0.456, which exceeds the critical value of 0.05. Therefore, the data were considered to meet the assumption of normality. Next, a homogeneity test was conducted to determine whether the variances of the pretest and posttest data were homogeneous. The test

results showed a significance value of 0.698, which is also greater than 0.05, indicating that the data had homogeneous variances or did not differ significantly.

A hypothesis test using the Paired Samples t-Test yielded a significance value (2-tailed) of 0.000, which is less than 0.05. This result provides evidence that there is a significant difference between the pretest and posttest results, reinforcing the assumption that the drill defense method is effective in improving students' underhand passing skills.

Overall, the results of this study demonstrate that the use of the drill defense training method not only significantly improves underhand passing technical skills but also serves as an appropriate training strategy for developing fundamental volleyball skills, particularly at the senior high school level. These findings are expected to serve as a reference for coaches and physical education teachers in designing more effective and structured training programs. For the future, further research is needed with a broader subject scope and a longer training duration to examine the long-term effects of this method.

## **CONCLUSION**

Based on the data obtained, processed, and analyzed during the research, it can be concluded that there was a change and improvement in forearm passing skills, particularly in responding to opponent attacks and receiving serves. This improvement was achieved through the application of the drill defense training method, which proved to be effective and can be developed further as a training strategy. Thus, the use of the drill defense training method has a positive and significant impact on enhancing forearm passing skills among female volleyball extracurricular participants at SMA Negeri 1 Lebakwangi.

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