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The Difference Between Slalom Dribble And Step Back Dribble Training On Shooting Accuracy of Basketball At Ballhandler Basketball Club

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ABSTRACT

Basketball is a sport that demands high technical skills, especially in three-point shooting, which plays a crucial role in determining the outcome of the match. The accuracy of these shots is greatly influenced by the ability to create space during dribbling. Two common methods that are often used are Slalom Dribble and Step-Back Dribble. This experimental study, which involved 20 teenage players at Club Ballhandler Kota Magelang with a Matching by Subject (MS) design and ordinal pairing to ensure equal pretest scores, measured the effect of both methods in improving three-point shooting accuracy. The first group underwent Slalom Dribble training followed by shooting, while the second group underwent Step-Back Dribble training with similar procedures. The results showed that both methods significantly improved shooting accuracy ($p < 0.05$), illustrating that both techniques are effective in creating optimal conditions for shooting. However, when compared directly, there was no significant difference between the two (p 0.881), indicating equal effectiveness. This is in line with the literature that emphasizes the importance of dribbling skills and shooting space in the context of defensive pressure. Therefore, coaches and players can choose one of the methods according to the player's character, the structure of the training session, or program variations, because both Slalom Dribble and Step-Back Dribble make a positive contribution to improving three-point shooting accuracy.

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INTRODUCTION

Basketball is known as a fast-paced, dynamic sport that requires players to have complete technical skills and effective game strategies. In today's modern basketball era, the three-point shot is one of the team's main weapons in scoring points. This shot is not just about adding numbers, but also being able to change the momentum of the game quickly and put the opponent under pressure (Miller, D., & Hurst, C, 2019). One of the key skills is the dribble, where players carry the ball while moving with control to create attacking opportunities.

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Players then try to shoot towards the opponent's basket, whether it is a close-range shot, medium shot, or three-point shot, which provides higher value in the game (Bangun, S.Y., Nugraha, T., & Handika, R., 2021) (Kinanthropology, 2023). Shooting is a basic technique that has a crucial role in winning basketball matches. The frequency and accuracy of shots determine the final result of the match, given that successful shots can directly contribute greatly to the team's score. Shooting practice is the most important part of every basketball training session (Mayangsuri, 2023; Mashuri, 2017).

Proper practice of basic shooting techniques will help players to be able to shoot well. The technique in shooting must be mastered properly according to the basic shooting techniques. Three-point shots are very effective because they provide a greater point advantage than two-point shots, which can help the team win (Yarmani, 2017; Uzun, A., & Pulur, A., 2018). Three-point shooting is one of the biggest scoring contributors in the sport of basketball. This technique is increasingly becoming popular in basketball games because many players shoot 3-point shots far behind the Three Point line back one meter. One of the NBA players who did it was Steph Curry, who in 1 match was able to produce a dozen three-point shots (Abbott, 2016).

However, producing accurate three-point shots is not easy. In addition to mastering the correct shooting technique, players are also required to have effective dribble skills to create shooting space, especially when faced with tight defence. Without a good dribble, the chances of making a clean three-point shot will be even smaller (Park, J., & Jeong, J, 2023)(Franks, A., Miller, A., Bornn, L., & Goldsberry, K, 2015). A good dribble in a basketball game depends not only on physical skills but also on the player's ability to dribble with the right technique.

The combination of basic dribble technique training with game simulations to improve shot accuracy, especially in pressure situations, there are two dribble training methods that can be used to improve shot accuracy are Slalom Dribble and Step-back Dribble (Jones, R., Walker, L., & Miller, D., 2017). Slalom Dribble trains players to dribble past cones or opposing players in a zigzag pattern that trains agility, balance, and ball control. This technique helps players penetrate the opponent's defence agilely and quickly (Smith, 2018; Irfan, M. S. S., & Suwardi, 2024). On the other hand, Step Back Dribble is one of the mainstay techniques of professional players. This technique allows players to advance with a dribble and then step back quickly to create distance from the guard before shooting. This movement allows the player to have a wider shooting space and reduces the risk of his shot being blocked by the opponent, thus increasing the accuracy of the shot (Chen, L., & Zhao, Q., 2022).

Interestingly, although these two dribbling techniques are both popular and widely used, there have not been many studies that directly compare the effect of Slalom Dribble and Step Back Dribble on the accuracy of basketball players' three-point shots. Most studies only focus on shooting or dribbling training separately, without reviewing how the two dribbling techniques can support three-point shooting performance in real time on the field (Fatmawati, D., Nurrochmah, S., & Heynoek, F, 2022) (Taylor, S., & Richards, J, 2016). An in-depth understanding of the effectiveness of these two dribbling

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techniques is essential for coaches and players to develop more strategic and modern training programs. Proper training not only improves players' technical skills, but also builds confidence and decision-making ability in real match situations (Permana, 2024; al, 2024)(ScienceDirect, 2022). According to observational interviews with coaches, one of the main weaknesses seen in the team is the inability of players to create enough space when shooting three-pointers effectively, which is often influenced by suboptimal dribble techniques.

This study aims to explore and analyze the effect of two dribble training methods, namely Slalom Dribble and Step-back Dribble, on the accuracy of three-point shots of basketball players at Club Ballhandler Kota Magelang. This research is expected to provide new insights into the differences between Slalom Dribble and Step Back Dribble Training on Shooting Accuracy of Basketball Games, which can help players improve their performance on the field.

METHODS

The study used a pure experimental quantitative approach with a true experimental matching by subject (MS) design, namely two groups (Slalom Dribble vs Step-Back Dribble) with equal initial ability based on pretest.

For four weeks, coaches implemented an integrated training program to strengthen slalom dribble technique and improve players' shooting accuracy. ×In the first week, the focus was on basic slalom dribble: zig-zagging the ball past 2 m cones along a 10-15 m track, performed in 3 sets of 10 repetitions with timing. In the second to third week, the training was increased by incorporating shooting: after passing 5-6 cones, players stopped and shot from three strategic points-top of the key, left wing, and right wing. In the fourth week, the intensity was doubled to 3 sets × 15 repetitions to train shooting accuracy and decision-making power under physical and mental pressure.

The five-week Step-Back Dribble training program is designed to progressively improve shooting technique and accuracy. Week 1 focuses on mastering the basics of the step-back dribble: perform an explosive dribble towards the cone, stop the movement abruptly, and step back while pulling the fulcrum leg-done 3 sets × 10 reps with timing. Weeks 2-3 incorporate shooting: after a dribble and step-back at each cone, players immediately perform a pull-up jump shot at the end point, remaining in a 3 sets × 10 rep format with emphasis on ball control, balance, and keeping the bounce low. Week 4 increases the intensity to 3 sets × 15 reps with the same pace, to work on shot accuracy and decision-making ability under physical pressure-making this drill very effective at building technique, timing, and consistency in game-like situations.

Before starting the training program, a three-point accuracy test was conducted on both groups to measure each player's initial ability: each subject took 30 shots (10 times from each position: top of the key, left wing, and right wing), with the number of successful shots recorded as the accuracy score. The use of three different points aims to provide a comprehensive picture of the player's shooting performance, following valid

and reliable methods in research on jump shooting accuracy for both two- and three-point shots. This ensures that the pre-test results truly reflect the players' basic abilities in realistic situations on the court.

This study has obtained ethical approval from the Health Research Ethics Commission, Faculty of Medicine, State University of Semarang, Indonesia, with approval number No. 059/KEPK/FK/KLE/2025.

The research subjects were 20 people who were active members of the Ballhandler Club in Magelang City. The subjects were then divided evenly into two treatment groups, namely Group A, consisting of 10 people and given slalom dribble training, and Group B, which also consisted of 10 people and given step-back dribble training. This division aims to compare the effectiveness of each training method on improving shooting accuracy in basketball games.

Statistical analysis was conducted using IBM SPSS Statistics 25 software with data description, where the mean and standard deviation (SD) of three-point shooting accuracy were calculated for each group before and after the intervention. These results provide a preliminary picture of the changes in accuracy levels due to training. Test the assumptions of normality and homogeneity of variance. The Shapiro-Wilk test was run using SPSS to ensure that the data distribution was close to normal. The results showed $p > 0.05$, so the data were considered normally distributed. Furthermore, the Levene's Test also yielded a p-value> 0.05, signifying that the variances of the two groups were homogeneous, levels that qualified for the use of parametric tests, followed by the use of a Paired Samples t-Test to see significant changes in accuracy in each group from pretest to posttest. This test confirmed that both training methods-Slalom Dribble and Step-Back Dribble-provided a significant improvement in accuracy (the respective t and p statistical values have been reported previously).

RESULTS AND DISCUSSION

This study involved 20 adolescent athletes ranging in age from 15-22 years, evenly divided into the *Slalom Dribble* and *Step-Back Dribble* Groups (10 participants each, 5 females and 5 males). The following table displays the baseline conditions of the participants: All variables (age, height, and weight) are presented as mean ± standard error (SE).

Table 1.
Comparison between groups

Variable	Slalom Dribble (*n = 10*)	Stepback Dribble (*n = 10*)	p-Value
	Mean ± SE	Mean ± SE	
Age (years)	16.43 ± 0.30	16.00 ± 0.31	0.330
Weight (kg)	55.0 kg± 3.0 kg	60.0 kg± 3.5 kg	0.295
Height (cm)	160.86 ± 1.22	170 cm± 1.5 cm	0.001
BMI ($kg \cdot m^{-2}$)	19.34 ± 0.42	21.57 ± 0.33	0.814

Table 1 shows that statistically, the age, weight, and BMI of the two groups were not significantly different, reflecting good balance. However, there was a significant height

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difference (p = 0.001), where the Step-Back group was taller on average. This is important to note as height can affect the technical aspects of shooting, such as shoot slope and release angle.

Table 2.
Mean data between pretest and posttest

Variable	N	Pretest Mean ± SD	Posttest Mean ± SD	P (pre vs post)
Slalom Dribble	10	11.30± 0.517	11.30± 0.517	0.004
Stepback Dribble	10	10.90± 0.482	10.90± 0.482	0.002

Both methods-Slalom Dribble and Step-Back Dribble-proved effective in improving three-point shooting performance. With statistically significant improvements (p = .004 and .002), these results indicate that the combination of technical training and game conditions can actually train players' confidence and control.

Table 3.
Normality Test

Variable	N	Sig. (Kolmogorov-Smirnov)	Sig. (Shapiro-Wilk)
Pretest Slalom Dribble	10	0.200*	0,627
Posttest Slalom Dribble	10	0.200*	0,910
Pretest Slalom Dribble	10	0,158	0,441
Posttest Slalom Dribble	10	0.200*	0,140

Before the analysis, the normality test of pretest and posttest data for Slalom Dribble and Stepback Dribble exercises using Kolmogorov-Smirnov and Shapiro-Wilk with α = 0.05 was conducted. The test results show the significance value (Sig.) for Pretest Slalom Dribble of 0.200 and 0.627, Posttest Slalom Dribble 0.200 and 0.910, Pretest Stepback Dribble 0.158 and 0.441, and Posttest Stepback Dribble 0.200 and 0.140. All of these values are greater than 0.05, so the data is normally distributed. Thus, further analysis can use parametric tests such as a paired t-test.

Table 4.
Homogeneity Test

Variable	Levene Statistic	Df1	Df2	Sig.
Pretest	10	0.200*	0,627	0,701
Posttest	10	0.200*	0,140	0,763

The variance homogeneity test was conducted using the Levene test to determine the similarity of variance between groups on pretest and posttest data. Based on the test results, the Levene Statistic value for the pretest was 0.153 with a significance of 0.701, while for the posttest it was 0.094 with a significance of 0.763. Because the Sig. Value on both variables is greater than 0.05; it can be concluded that the pretest and posttest data have homogeneous variances. Thus, the assumption of homogeneity is met, and the analysis can proceed using parametric tests.

Table 5.
Paired sample t-test

	Mean Difference Implication	t	df	Sig. (2-tailed)
Pretest slalom dribble – Posttest slalom	-2.503	-6.626	9	.000
Pretest stepback dribble - Posttest stepback dribble	-2.784	-7.442	9	.000

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Based on the paired t-test results, it is known that Slalom Dribble training has a mean difference value of -2.503 with a t value = -6.626 and a significance of 0.000 ($p < 0.05$). Similarly, the Stepback Dribble exercise showed a mean difference of -2.784 with a t value = -7.442 and a significance of 0.000 ($p < 0.05$). Because the significance value of both variables is smaller than 0.05, it can be concluded that there is a significant difference between the pretest and posttest results in Slalom Dribble and Stepback Dribble training. In other words, both types of training have a significant effect on improving the dribbling skills of basketball players.

Table 6.
Independent t-test

		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
Results	Equal variances assumed	.881	.200	1.316	-2.564
	Equal variances not assumed	.881	.200	1.316	-2.567

Based on the independent sample t-test, the Sig. (2-tailed) value of 0.881 ($p > 0.05$), which indicates there is no significant difference between the two groups. The Mean Difference of 0.200 with a Standard Error Difference of 1.316, as well as a 95% confidence interval across zero, reinforces this conclusion. That is, both types of training provide relatively similar results on the three-point shooting ability of basketball players.

Discussion

Performance Improvement on Slalom Dribble Training

The results of descriptive analysis show that three-point shooting training with the slalom dribble method provides an increase in the average score from 11.30 in the pre-test to 15.10 in the post-test. The median also increased from 11.50 to 14.50, indicating that most participants gained an increase in ability. In addition, the maximum score increased from 14 to 20, while the minimum score rose from 9 to 10, and the range of scores widened from 5 to 10. The standard deviation increased from 1.636 to 3.107, indicating a greater variation in results among participants in the post-test. The Paired Sample t-Test results showed a t value of -6.626 with a significance level of 0.000 ($p < 0.05$), which means there is a significant effect of slalom dribble training on improving the three-point shooting accuracy of basketball players. The pre-test and post-test correlation was also strong ($r = 0.889$; $p = 0.001$). This finding supports motor training theory, which states that exercises involving zig-zag patterned dribble movements ((Bompa, T. O., & Haff, G. G, 2009) . Slalo, train coordination of motion, ball control, and more stable shooting transitions, so that they have an impact on increasing shooting accuracy

Performance Improvement on Stepback Dribble Training

Performance Improvement in Stepback Dribble Training. In the step-back dribble method, the average score increased from 10.90 in the pre-test to 14.90 in the post-test, while the median increased from 11.00 to 15.50. The maximum value increased from 13 to

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18, the minimum value rose from 8 to 11, and the standard deviation increased from 1.524 to 2.767, indicating a variation in results between participants in the post-test. The results of the Paired Sample t-Test showed the t value = -7.442 with a significance of 0.000 ($p < 0.05$). This means that step-back dribble training also has a significant effect on increasing the accuracy of basketball players' three-point shooting. The correlation value obtained was 0.841 ($p = 0.002$), indicating a strong relationship between the pre-test and post-test scores. These results follow the theory that step-back dribble training, which involves backwards movement to create shooting space, can improve body balance and momentum control, thereby supporting shooting accuracy under defensive pressure (Ziv & Lidor, 2010).

Comparison of the Effectiveness of the Two Training Methods

Comparison of the Effectiveness of the Two Training Methods. Although both training methods provided significant performance improvements, the independent sample t-test results showed a significance value of 0.881 ($p > 0.05$) with an average difference of 0.200. This shows that there is no significant difference between the two methods in improving the accuracy of basketball players' three-point shooting. Thus, both training methods are equally effective, despite having different focuses. The slalom dribble exercise emphasizes lateral agility and ball control during the dribble drive, while the stepback dribble trains the creation of shooting space and shooting stability.

This study brings novelty by comparing two specific dribble training methods, namely Slalom Dribble and Step-Back Dribble (Metulini, 2018) Linking player movement patterns (such as dribble) with team performance in shooting shows the potential relevance of methods such as slalom or step-back in a three-point context in improving three-point shooting ability in adolescent athletes. In addition to assessing the effectiveness of each exercise, this study also tested for significant differences between the two methods, supported by comprehensive and valid statistical analysis. Despite the height difference between the groups, the results showed both drills were equally effective, with no significant difference in the improvement of shooting performance. The findings provide a new contribution to the selection of effective and practically relevant dribbling training methods for coaches and youth athletes.

CONCLUSION

Based on the results of the study, it can be concluded that both dribble training methods, namely Slalom Dribble and Step-Back Dribble, are effective in improving three-point shooting ability in adolescent athletes. Although there is a significant difference in height between groups, this does not affect the effectiveness of the two exercises in improving shooting performance. In addition, no significant difference was found between the two training methods in terms of improving shooting ability, so both can be used interchangeably or adapted to training needs. This study provides a strong scientific basis for coaches to choose an effective dribble training method that suits the characteristics of adolescent athletes to improve shooting skills in basketball games.

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