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The Effect Of Single Foot Hops Training On The Ball-Driffing Skills Of The Extracurricular Team

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ABSTRACT

Dribbling skill is one of the fundamental techniques in football that plays a crucial role in maintaining ball possession, overcoming opponents, and creating scoring opportunities. The development of dribbling ability requires appropriate and systematic training methods that can improve both physical and technical performance. However, studies examining the effectiveness of ladder drill single foot hop training on dribbling skills among adolescent football players remain limited. Therefore, this study aimed to analyze the effect of ladder drill single foot hop training on the dribbling ability of football players at SMP Negeri 1 Lembo. This study employed a quantitative approach using a quasi-experimental one-group pretest–posttest design. The sample consisted of 18 participants who were members of the school's extracurricular football team and were selected using a total sampling technique. The intervention was conducted for six weeks with a training frequency of three sessions per week. Dribbling performance was measured before and after the intervention using a standardized dribbling test. Data were analyzed using descriptive statistics and a paired sample t-test with a significance level of $p < 0.05$. The results showed that the average dribbling time improved from 15.50 ± 1.44 seconds at pre-test to 13.38 ± 1.00 seconds at post-test. The intervention increased dribbling performance effectiveness by 13.68%, with statistical analysis revealing a highly significant difference ($p < 0.001$). In conclusion, ladder drill single foot hop training significantly improves dribbling skills and can be recommended as an effective training method for developing football performance among adolescent players.

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INTRODUCTION

Football is one of the most popular sports worldwide and has become an integral part of Indonesian society, attracting participants from children to adults. The popularity of football has encouraged many young athletes to pursue sporting achievement and develop aspirations to become professional players, inspired by global football icons such as Lionel Messi (Febrian & Bakti, 2021). In the context of youth football development,

mastering fundamental technical skills is essential because technical proficiency serves as the foundation for future performance and competitive success.

Among the fundamental techniques in football, dribbling is considered one of the most important skills. Dribbling refers to the ability to move the ball from one location to another while maintaining control through coordinated foot movements (Sakti, 2017). It enables players to penetrate defensive lines, create scoring opportunities, maintain possession, and support offensive strategies during match situations. Valentino and Hasanuddin (2023) emphasized that effective dribbling requires continuous control of the ball while moving at varying speeds and directions. Consequently, players must possess not only technical competence but also adequate physical and motor abilities to execute dribbling efficiently. The success of dribbling performance is influenced by several factors, including lower-limb strength, balance, agility, coordination, reaction speed, and neuromuscular control (Mappaompo, 2020). During dribbling actions, athletes are required to rapidly change direction, maintain body stability, and synchronize lower-extremity movements with ball manipulation. Previous studies have demonstrated that deficiencies in these physical and motor components often result in decreased dribbling effectiveness and increased ball loss during competition (Mappaompo, 2023).

Observations in school football extracurricular programs frequently reveal that many junior high school athletes still experience difficulties in maintaining ball control while moving at speed. These limitations are often associated with insufficient lower-limb explosive power and inadequate movement coordination. Such conditions indicate the need for evidence-based training interventions capable of simultaneously improving physical and technical performance. Therefore, identifying appropriate training methods that contribute directly to dribbling skill enhancement remains an important issue in youth football coaching and physical education.

Furthermore, adolescence represents a critical developmental period characterized by rapid growth of neuromuscular functions, motor coordination, and sport-specific skill acquisition. According to Susanto and Lismadiana (2016), athletes aged 13–15 years demonstrate heightened responsiveness to training stimuli, making this age category particularly suitable for structured skill-development programs. Consequently, training interventions implemented during this stage may generate substantial improvements in football performance when designed according to the principles of specificity and progressive overload.

Recent developments in sports science have highlighted the importance of plyometric training as an effective method for improving athletic performance. Plyometric exercises utilize the stretch-shortening cycle mechanism to enhance neuromuscular efficiency, muscular power, and movement speed (Ramirez-Campillo et al., 2020). Numerous studies have reported that plyometric training positively affects sprint performance, agility, jumping ability, change-of-direction speed, and sport-specific movement skills among youth athletes (Moran et al., 2018; Chaabene et al., 2019).

In football, plyometric training has been widely implemented to improve lower-body power and explosive performance. Research conducted among youth football players

demonstrated that systematic plyometric programs significantly enhanced sprint speed, acceleration capacity, and agility performance (Hammami et al., 2020). These physical adaptations are highly relevant to football because explosive lower-limb actions frequently occur during dribbling, tackling, shooting, and directional changes.

One specific plyometric exercise receiving increasing attention is the Single Foot Hop or Single Leg Hop. This exercise involves unilateral jumping movements that require athletes to generate force, stabilize the body, and maintain balance on a single limb (Nuraini, 2024). Compared with bilateral jumping exercises, unilateral plyometric training more closely resembles football movement patterns, where players frequently perform actions using one dominant leg during running, cutting, kicking, and dribbling situations.

Several studies have reported that Single Foot Hop training improves lower-limb muscular power, dynamic balance, proprioception, and neuromuscular coordination (Markovic & Mikulic, 2019; Chaabene et al., 2021). Improved balance and coordination are particularly relevant because dribbling performance depends heavily on an athlete's ability to maintain postural stability while manipulating the ball under dynamic conditions. Moreover, ladder-based drills integrated with single-foot hopping exercises can enhance footwork efficiency and movement precision, contributing to improved sport-specific performance (Hayati & Endriani, 2021).

Contemporary literature also suggests that training methods emphasizing unilateral force production may provide greater transferability to football-specific skills than traditional conditioning programs (Asadi et al., 2018). Consequently, integrating Single Foot Hop Ladder Drill exercises into football training programs has the potential to simultaneously develop physical and technical capacities required for effective dribbling performance.

Despite the growing body of literature regarding plyometric training, several research gaps remain evident. First, most previous studies have primarily focused on physical performance outcomes such as vertical jump height, sprint speed, agility, power, and muscular strength (Ramirez-Campillo et al., 2020; Hammami et al., 2020). Comparatively fewer studies have investigated the direct influence of plyometric interventions on technical football skills, particularly dribbling performance. Second, existing studies often employ general plyometric programs consisting of multiple exercises without specifically examining the isolated contribution of Single Foot Hop training. As a result, the effectiveness of unilateral plyometric exercises in enhancing football-specific technical abilities remains insufficiently understood. Third, limited empirical evidence is available regarding the implementation of Single Foot Hop Ladder Drill training among junior high school football athletes in Indonesia. Most previous investigations have involved elite athletes, senior players, or university students, creating a contextual gap concerning younger athletes participating in school extracurricular programs. Fourth, there remains a lack of evidence explaining whether improvements in neuromuscular coordination and unilateral lower-limb power resulting from Single Foot Hop exercises can be translated into measurable improvements in dribbling skill performance. Given the importance of dribbling as a fundamental football technique, this gap warrants further scientific investigation.

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Therefore, research examining the direct relationship between Single Foot Hop training and dribbling ability among adolescent football players is both theoretically and practically significant. The findings may provide evidence-based recommendations for coaches and physical education teachers seeking effective training strategies to enhance technical football performance.

Based on the identified problems and research gaps, this study aims to determine the effect of Single Foot Hop Ladder Drill training on the dribbling skills of the football extracurricular team at SMP Negeri 1 Lembo. The novelty of this research lies in several aspects. First, unlike previous studies that predominantly assessed physical performance variables, this study focuses specifically on dribbling skill as a football-specific technical outcome. Second, the study investigates the effectiveness of a unilateral plyometric training model, namely Single Foot Hop Ladder Drill, which more closely reflects the movement characteristics encountered during football activities. Third, this research contributes empirical evidence involving adolescent athletes within a school extracurricular setting, a population that remains underrepresented in existing literature. Finally, the study seeks to bridge the gap between physical conditioning and technical skill development by examining how neuromuscular adaptations generated through plyometric training may influence dribbling performance.

In conclusion, dribbling is a fundamental football skill that requires a combination of technical mastery, motor coordination, balance, agility, and lower-limb explosive power. Although plyometric training has been widely recognized as an effective method for improving physical performance, evidence regarding its direct influence on football dribbling skills remains limited, particularly among junior high school athletes. Therefore, investigating the effectiveness of Single Foot Hop Ladder Drill training on dribbling performance is expected to contribute to the development of evidence-based football coaching practices and provide valuable insights for optimizing youth athlete development programs.

METHODS

study aimed to determine the effect of Single Foot Hops training on the dribbling skills of the extracurricular football team at SMP Negeri 1 Lembo. The intervention was conducted on the football field of SMP Negeri 1 Lembo over a six-week period, with a training frequency of three sessions per week, resulting in a total of 18 training sessions. Previous studies have suggested that a training duration of 6–8 weeks is sufficient to induce significant neuromuscular adaptations, improve lower-limb power, and enhance sport-specific performance among adolescent athletes (Ramirez-Campillo et al., 2020; Chaabene et al., 2019). The population of this study consisted of 18 students who actively participated in the football extracurricular program at SMP Negeri 1 Lembo. Considering the relatively small population size, the total sampling technique was employed, whereby all eligible participants were included as research subjects (Setiawan et al., 2023). Inclusion criteria required participants to be actively registered members of the extracurricular football team and willing to participate throughout the study period.

Exclusion criteria included illness, injury, absence from training sessions exceeding 20% of the intervention period, or voluntary withdrawal from the study. Consequently, the sample represented the entire accessible population, thereby minimizing sampling bias and increasing internal validity (Creswell & Creswell, 2018).

The intervention consisted of Single Foot Hops training integrated into a ladder drill format. This plyometric exercise emphasizes unilateral jumping movements designed to improve lower-limb explosive power, balance, neuromuscular coordination, and movement efficiency (Asadi et al., 2018; Hammami et al., 2020). The training protocol was administered for 18 sessions, following recommendations that repeated exposure to structured plyometric stimuli is necessary to achieve optimal physiological adaptation and motor learning outcomes (Attamimi et al., 2025; Moran et al., 2018).

Primary data were collected through direct testing and measurement procedures. Dribbling performance was assessed using a standardized football dribbling test administered before the intervention (pretest) and after completion of the six-week training program (posttest). Pretest and posttest assessments were conducted under identical environmental and procedural conditions to ensure measurement consistency and reliability (Hopkins et al., 2019). The collected data were subsequently used to evaluate changes in dribbling performance resulting from the training intervention.

Data processing was performed using Microsoft Excel 2019, while statistical analyses were conducted using IBM SPSS Statistics version 23.0. Descriptive statistics, including mean, standard deviation, minimum score, and maximum score, were calculated to summarize participant characteristics and performance outcomes. Prior to hypothesis testing, data normality was assessed using the Shapiro–Wilk test, which is recommended for small sample sizes and provides robust evaluation of data distribution assumptions (Razali & Wah, 2018). Inferential analysis was performed using a paired sample t-test to compare pretest and posttest dribbling scores. Statistical significance was established at $p < 0.05$, consistent with conventional standards in sports performance research (Field, 2022). This analytical procedure enabled the researchers to determine whether Single Foot Hops training produced significant improvements in football dribbling skills among the participants.

RESULTS AND DISCUSSION

Result

The results of this study were obtained from dribbling skill tests conducted before (pre-test) and after (post-test) the implementation of the Single Foot Hops training program. Dribbling performance was measured in seconds, where a lower score indicated better dribbling ability because participants required less time to complete the test. Data collection was carried out at two measurement points, namely the baseline (pre-test) and endline (post-test) periods following six weeks of intervention.

Prior to hypothesis testing, a normality test was performed using the Shapiro–Wilk test. The results showed that all data had a significance value greater than 0.05 ($p > 0.05$),

indicating that the data were normally distributed. Therefore, parametric statistical analysis using the paired sample t-test was considered appropriate for evaluating differences between pre-test and post-test measurements.

Descriptive Statistics of Dribbling Ability

Table 1 presents the descriptive statistics of participants' dribbling performance before and after the Single Foot Hops training intervention.

Table 1.

Descriptive Statistics of Dribbling Ability

Component	Pre-Test	Post-Test
Minimum (s)	13.21	10.76
Maximum (s)	17.55	14.59
Mean (s)	15.50	13.38
SD	±1.44	±1.00

Table 1 shows that the average dribbling time before the intervention was 15.50 ± 1.44 seconds, with a minimum value of 13.21 seconds and a maximum value of 17.55 seconds. Following six weeks of Single Foot Hops training, the average dribbling time decreased to 13.38 ± 1.00 seconds, with a minimum value of 10.76 seconds and a maximum value of 14.59 seconds.

The reduction in mean dribbling time indicates that participants completed the dribbling test more quickly after the intervention. Furthermore, the lower standard deviation observed in the post-test suggests a more homogeneous performance among participants following the training program.

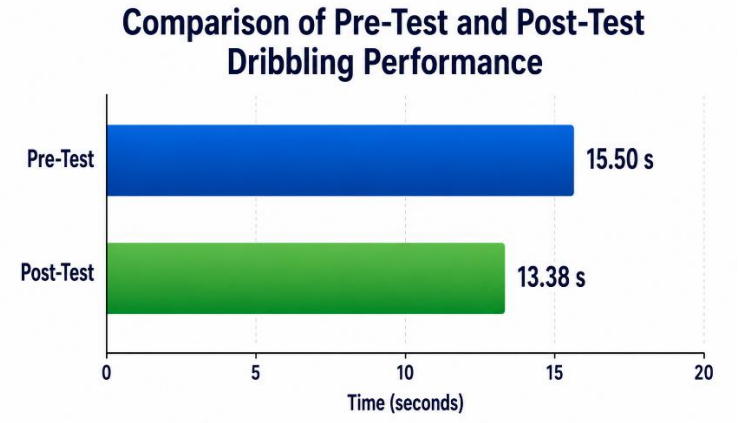

Figure 1.

Comparison of Pre-Test and Post-Test Dribbling Performance

Improvement: ↓ 13.68%

The graphical representation demonstrates a noticeable reduction in dribbling completion time after the intervention, indicating improved ball-control efficiency and movement execution.

Effect of Single Foot Hops Training on Dribbling Ability

To determine whether the observed improvement was statistically significant, a paired sample t-test was conducted. The results are presented in Table 2.

Table 2.
Effect of Single Foot Hops Training on Dribbling Ability

Variable	Pre-Test (Mean ± SD)	Post-Test (Mean ± SD)	p-value
Single Foot Hops Ladder Drill	15.50 ± 1.44	13.38 ± 1.00	<0.001*
% Delta	-	13.68%	

The paired sample t-test revealed a statistically significant difference between pre-test and post-test dribbling performance ($p < 0.001$). The average dribbling time decreased from 15.50 seconds before training to 13.38 seconds after training, representing an improvement of 13.68%.

The negative trend observed in dribbling time indicates a reduction in the duration required to complete the dribbling task. Since lower dribbling times reflect better performance, this finding demonstrates that the participants experienced substantial improvements in dribbling ability following the implementation of the Single Foot Hops training program. Overall, the statistical results provide strong evidence that the Single Foot Hops Ladder Drill intervention positively influenced football dribbling performance among members of the SMP Negeri 1 Lembo extracurricular football team. The significant decrease in dribbling time suggests that the training effectively enhanced movement efficiency, lower-limb coordination, balance, and ball-control skills, thereby contributing to improved technical performance in football.

Discussion

The findings of this study demonstrated that Single Foot Hops training significantly improved the dribbling skills of the extracurricular football team at SMP Negeri 1 Lembo. This conclusion is supported by the statistical results, which revealed a significant reduction in dribbling time from 15.50 ± 1.44 seconds in the pre-test to 13.38 ± 1.00 seconds in the post-test, representing an improvement of 13.68% with a significance level of $p < 0.001$. These findings indicate that the six-week Single Foot Hops training intervention effectively enhanced participants' dribbling performance. The improvement suggests that plyometric-based unilateral exercises can positively influence football-specific technical skills, particularly those involving rapid changes of direction, balance maintenance, and ball control during movement (Ramirez-Campillo et al., 2020; Chaabene et al., 2019).

In football coaching, improving dribbling ability is a primary objective because dribbling represents one of the most fundamental technical skills required during offensive and defensive play. Effective dribbling enables players to maintain possession, evade opponents, create scoring opportunities, and support tactical execution during matches (Mappaompo, 2023; Valentino & Hasanuddin, 2023). Consequently, coaches are required to select training methods that not only improve physical fitness but also directly contribute to sport-specific performance outcomes. The positive effects observed in this study suggest that Single Foot Hops training can serve as an effective conditioning strategy for youth football players.

The effectiveness of Single Foot Hops training can be explained through neuromuscular adaptation mechanisms. Plyometric exercises utilize the stretch-shortening cycle (SSC), a physiological process involving rapid eccentric muscle contraction followed immediately by concentric contraction (Markovic & Mikulic, 2019). This mechanism enhances motor unit recruitment, increases muscle activation efficiency, and improves force production capacity. Previous studies have shown that plyometric training improves lower-limb explosive power, reaction speed, balance, and agility, all of which are essential components supporting dribbling performance in football (Asadi et al., 2018; Hammami et al., 2020; Moran et al., 2018).

The Single Foot Hops Ladder Drill specifically requires athletes to perform unilateral jumping movements while maintaining postural control and movement precision. Such exercises stimulate proprioceptive receptors and improve intermuscular coordination, allowing athletes to execute complex movement patterns more efficiently (Akhmad & Musrifin, 2023). Improved coordination between the nervous system and musculoskeletal system contributes directly to enhanced movement quality during dribbling. This finding supports the explanation of Dahlan (2019), who stated that dribbling performance is a product of coordinated interactions between neural control mechanisms and muscular contractions. When these systems function efficiently, athletes are able to control the ball more effectively while simultaneously maintaining speed and directional accuracy.

From an anatomical and physiological perspective, Single Foot Hops training primarily activates the gluteus maximus, quadriceps femoris, hamstrings, gastrocnemius, and soleus muscle groups. These muscles play a critical role in generating propulsive force during running, accelerating, decelerating, and changing direction while dribbling (Suchomel et al., 2018; Comfort et al., 2019). Repeated exposure to unilateral plyometric exercises increases muscle fiber recruitment, particularly type II fast-twitch fibers, which are responsible for explosive movements (Cormie et al., 2018). As a result, athletes become capable of producing greater force within shorter periods, facilitating more efficient and dynamic dribbling movements.

The observed improvement may also be attributed to physiological adaptations resulting from the structured six-week training program. According to Akhmad (2015), repeated exercise stimuli induce muscular hypertrophy and enhance neuromuscular efficiency. Contemporary research similarly indicates that six weeks of plyometric training is sufficient to produce significant improvements in lower-limb power and sport-specific performance among adolescent athletes (Ramirez-Campillo et al., 2020; Chaabene et al., 2021). The training frequency applied in this study, namely three sessions per week, provided adequate stimulus while allowing sufficient recovery for adaptation processes to occur.

Training consistency is another important factor explaining the study results. Participants completed eighteen training sessions over six weeks, enabling gradual and continuous physiological adaptation. Consistent exercise exposure promotes improvements in cardiovascular function, neuromuscular coordination, muscular

strength, and movement efficiency (Suryadi, 2021; Behm et al., 2021). Previous studies have consistently reported that training frequencies of three to five sessions per week produce meaningful improvements in youth athletic performance when accompanied by appropriate progression and recovery (Lloyd et al., 2016; Faigenbaum et al., 2020). Therefore, the improvement in dribbling ability observed in this study is likely the result of cumulative adaptations generated through systematic and progressive training implementation.

The present findings are consistent with previous studies investigating the effects of plyometric training on football performance. Research by Hammami et al. (2020) reported significant improvements in agility and change-of-direction speed among youth football players following plyometric interventions. Similarly, Ramirez-Campillo et al. (2020) found that plyometric training positively influenced sprint performance, agility, and technical execution in football athletes. Studies conducted in Indonesia have also demonstrated that ladder drills and plyometric exercises improve coordination, agility, and football-specific skills among adolescent athletes (Hayati & Endriani, 2021; Nuraini, 2024). The current study extends this evidence by specifically demonstrating the effectiveness of Single Foot Hops Ladder Drill training in improving dribbling performance among junior high school football players.

Overall, the results indicate that Single Foot Hops training provides a scientifically supported method for enhancing dribbling skills through improvements in neuromuscular coordination, lower-limb explosive power, balance, and movement efficiency. The significant reduction in dribbling time confirms that the intervention effectively translated physical adaptations into improved technical performance. Therefore, Single Foot Hops Ladder Drill training may be recommended as a practical and evidence-based training strategy for football coaches, physical education teachers, and youth athlete development programs seeking to optimize dribbling ability and overall football performance.

CONCLUSION

This study concludes that the Single Foot Hops Ladder Drill training program has a significant positive effect on the dribbling skills of the extracurricular football team at SMP Negeri 1 Lembo. The statistical findings demonstrated a substantial improvement in dribbling performance after six weeks of training, as evidenced by the decrease in average dribbling time from 15.50 ± 1.44 seconds during the pre-test to 13.38 ± 1.00 seconds during the post-test. This improvement represents a 13.68% increase in dribbling performance, with the paired sample t-test indicating a statistically significant difference ($p < 0.001$).

Conceptually, the findings support the view that unilateral plyometric exercises such as Single Foot Hops can enhance neuromuscular coordination, dynamic balance, lower-limb explosive power, and movement efficiency. These physical adaptations contribute directly to improved ball control and dribbling execution in football. The

results also confirm that a structured training program conducted three times per week for six weeks provides sufficient stimulus to improve sport-specific technical performance among adolescent athletes.

Despite these positive outcomes, this study has several limitations. The sample size was relatively small because it involved the entire available population of extracurricular football players, and participant characteristics such as biological maturation, training experience, and physical fitness levels were not included as selection criteria. Therefore, future studies are recommended to involve larger and more diverse samples, include control groups, and examine additional physical and technical variables to further validate the effectiveness of Single Foot Hops training in youth football development programs.

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