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Agility Training to Improve Dribbling Skills in 12–14-Year-Old Satria Mandala FC Players

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Abstract

Objectives. This study aims to evaluate the effect of agility training on improving the dribbling ability of youth football players aged 12–14 years at SSB Satria Mandala FC in Campursari Village. The study was motivated by the observation that many young players struggled with ball control and agility, which are essential for effective dribbling in match situations.

Materials and Methods. A quasi-experimental design using a one-group pretest-posttest model was employed. The participants consisted of 32 male players aged 12–14. The intervention included 16 training sessions over four weeks, focusing on zigzag cone drills to develop agility. Dribbling performance was assessed before and after the training using a standardized ball control and agility test. Data were analyzed using paired sample t-tests with SPSS version 26.

Results. The pretest mean score was 18.81, while the posttest mean score increased to 24.69. The paired t-test showed a statistically significant improvement ($p = 0.001$), indicating that agility training had a strong positive effect on the players' dribbling ability.

Conclusions. The study concludes that structured agility training using zigzag cone drills is effective in enhancing dribbling performance in youth football players. This method can be recommended for coaches and football academies aiming to improve technical skills and agility in young athletes.

Keywords: sports agility training, dribbling, youth football, ball control, zigzag drill

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Introduction

Sport plays a vital role in shaping various aspects of life (Kuswoyo, 2020), including peace, economy, culture, and education (Andika et al., 2024). In Indonesia, sports have been practiced long before the country gained independence and later institutionalized as a competitive platform to foster international relations, national pride, and athletic achievement (Mulyana & Lutan, 2020). One of the most prominent community-based programs in sports development is football training (Abdurrahman & Kafrawi, 2021), commonly organized through football schools (Sekolah Sepak Bola or SSB), which are particularly popular among youth (Kekuatan et al., 2016).

The growth of football in Indonesia is evident not only from national competitions such as Liga 1, Liga 2, and the President's Cup but also from the emergence of local football clubs and academies across the nation (Kuswoyo, 2018). One such institution is SSB Satria Mandala FC, located in Campursari Village, Megang Sakti Subdistrict, Musi Rawas Regency. This football school aims to identify and develop the football talents of young players in the region, fostering their technical, mental, and physical skills with the ultimate goal of producing high-performing, professional athletes.

Fundamental football techniques form the foundation of early training (Cope et al., 2017), including kicking, heading, dribbling, tackling, ball control, throwing, and ball feints (Kuswoyo & Betaubun, 2019). Among these, dribbling is one of the most crucial skills (Defliyanto et al., 2022). Dribbling refers to the act of controlling the ball with one’s feet while moving across the pitch, typically used to bypass defenders, maintain possession, or create passing opportunities (Burhaein et al., 2020). According to Wildani et al. (2020), effective dribbling involves keeping the ball close and under control to avoid interception. The three main dribbling techniques include using the inside of the foot, the outside, and the instep.

In football, dribbling contributes significantly to both individual and team performance (Kuswoyo & Betaubun, 2019). It allows players to maneuver through opponents, create space, and set up goal-scoring opportunities (Kong et al., 2015). For instance, dribbling near the penalty area may be used to deceive defenders before taking a shot or passing to a teammate. A successful dribble often leads to increased scoring chances, as it destabilizes the opposing defense (Memmert et al., 2023).

Agility is a physical component that greatly supports the effectiveness of dribbling (Váczi et al., 2013). Basrizal et al. (2020) define agility as the ability to change the body's position quickly and precisely without losing balance or coordination. In football, agility

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enables players to shift direction and pace rapidly, which is essential for evading opponents during dribbling.

However, preliminary observations at SSB Satria Mandala FC in Campursari Village revealed that many players aged 12–14 years lack proper dribbling technique and agility. Common errors include poor ball control when trying to bypass opponents and a general inability to perform rapid directional changes effectively. These shortcomings suggest a need for targeted agility training to enhance their dribbling performance. Despite regular training sessions, several players continue to exhibit suboptimal dribbling skills, possibly due to fatigue, low physical fitness, or inadequate training design.

Therefore, this study seeks to investigate whether agility training can significantly improve dribbling performance among young football players. A deeper exploration through experimental research is essential to validate this approach and offer practical recommendations for football development programs at the youth level.

Materials and Methods

Study Participants.

This study involved young football players from SSB Satria Mandala FC, located in Campursari Village, Musi Rawas Regency. The population consisted of 59 children enrolled in the football school, distributed across different age groups. From this population, a purposive sample of 32 participants aged 12 to 14 years was selected as the experimental group (Cohen et al., 2017). All participants regularly trained at the football school and had similar backgrounds in terms of training frequency and prior exposure to dribbling drills. Consent was obtained from participants and their guardians prior to participation.

Age	Number of Participants
12	19
13–14	13
Total	**32 (sample)**

Study organization.

This study employed a quasi-experimental design using a One-Group Pretest–Posttest Design. The aim was to examine the effect of agility training on football dribbling performance. The research was conducted over 16 training sessions in October 2024 at the SSB Satria Mandala FC field. The treatment applied was a specific agility training program using zigzag dribbling exercises. The design model is illustrated as follows:

$$O_1 - X - O_2$$

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Where:

- **O_1** = Pre-test score (before treatment)
- **X** = Agility training intervention
- **O_2** = Post-test score (after treatment)

To assess the dribbling skills of the participants, a standardized dribbling agility test was employed. This test, commonly used in football coaching, aims to measure a player's ability to control and maneuver the ball swiftly through a zigzag course. The setup required basic equipment, including a football, five cones arranged in a zigzag formation, a stopwatch, and clearly marked start and finish lines. During the test, each participant stood behind the starting line with the ball. Upon the command "Go," the participant began dribbling the ball as quickly as possible through the cones, following the designated path without missing any markers. Timing began at the start signal and stopped as the participant crossed the finish line. Each player was given two attempts, with the best time—recorded to the nearest tenth of a second—used as the final score. This test was conducted twice during the study: once before the agility training intervention (pretest) and once after completing the 16-session program (posttest), to evaluate improvement in dribbling performance.

Statistical analysis.

The data obtained from the pretest and posttest assessments were analyzed using the Statistical Package for the Social Sciences (SPSS) version 26. The analysis began with a test for normality to determine whether the data were normally distributed, which is a prerequisite for conducting parametric statistical tests. The Shapiro–Wilk test was used for this purpose, and the results were interpreted using a significance threshold of 0.05. If the p-value obtained from this test was greater than 0.05, the data were considered to follow a normal distribution and thus appropriate for further parametric analysis.

Following confirmation of normality, a paired sample t-test was applied to examine whether there was a statistically significant difference between the participants' pretest and posttest scores. This test compared the mean difference in dribbling performance before and after the agility training intervention. The statistical significance of the results was determined based on the calculated t-value in comparison to the critical value from the t-distribution table. The null hypothesis (H_0) would be accepted if the calculated t-value was less than the critical t-value, indicating no significant effect of agility training on dribbling performance. Conversely, the alternative hypothesis (H_a) would be accepted if the calculated

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t-value exceeded the critical value, suggesting that agility training had a significant impact on improving the participants' dribbling skills.

Results

This study was conducted at the football field of SSB Satria Mandala FC in Campursari Village from May 1 to June 4, 2025. The research involved 32 participants aged 12–14 years. Initially, participants completed a pretest to assess their dribbling skills. Following this, they underwent a zigzag cone agility training program over 16 sessions—14 sessions for agility training and two for pretest and posttest evaluations. Each session lasted 90 minutes and was conducted four times per week.

Descriptive statistics showed a clear improvement in dribbling performance after the intervention. The mean pretest score was 18.81, while the mean posttest score increased to 24.69. Table 1 presents the individual results of the pretest and posttest scores. The data were further grouped into frequency distributions to visualize score ranges and their frequencies. Table 2 and Table 3 show the interval distributions for pretest and posttest scores, respectively. A normality test was conducted using the Kolmogorov-Smirnov method with SPSS 26. The results in Table 4 indicate that both pretest and posttest data are normally distributed. Since the significance values are greater than 0.05, the normality assumption is met. A paired sample t-test was then conducted to evaluate the significance of the improvement as seen at Table 5.

Table 1. Pre-test and Post-test Scores of Dribbling Ability

No	Name	Pretest	Posttest
1	Alif Pratama	16	28
2	Ahmad Prayoga	17	24
3	Januar	16	26
4	Safno	14	20
5	M. Aditia	23	28
6	M. Deni	23	26
7	Muhammad Tegar	18	20
8	Muhammad Yadi	22	26
9	Ferdiansyah	15	22
10	Ikram	16	23
11	Ramadhoni	22	24
12	Aldi Saputra	15	26
13	Pratama	20	25
14	Dwi Rahmad	16	22
15	Afin	20	30
16	Habidin	16	22
17	Raffi	22	28
18	Abdul Rahmat	20	25
19	Amen	20	30
20	Fathul Huda	18	26
21	Haris Saputra	18	30

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22	Harun	17	22
23	Irham	20	22
24	Verdi Bastary	16	19
25	Rizki Ramadan	24	26
26	Alfalah	17	19
27	Pranata	18	21
28	Ansori	22	25
29	Arkanio Burhan Nudin	20	25
30	Febriyan	15	22
31	Hasan Bastori	24	30
32	Ikhsan Pratama	22	28
	Total	**602**	**790**
	Mean	**18.81**	**24.69**

Table 2. Frequency Distribution of Pre-test Scores

Score Interval	Frequency (f)	Percentage (%)
14–15	4	12.50
16–17	9	28.13
18–19	4	12.50
20–21	6	18.75
22–23	7	21.88
24–25	2	6.25
Total	**32**	**100**

Table 3. Frequency Distribution of Post-test Scores

Score Interval	Frequency (f)	Percentage (%)
19–20	4	12.50
21–22	7	21.88
23–24	3	9.38
25–26	10	31.25
27–28	4	12.50
29–30	4	12.50
Total	**32**	**100**

Table 4. Kolmogorov-Smirnov Test for Normality

Test	N	Mean	Std. Deviation	Sig. (2-tailed)
Pretest	32	18.81	2.978	0.112
Posttest	32	24.69	3.297	0.137

Table 5. T-Test Results

Variable	t-value	df	Sig. (p)
Pre vs. Post	3.600	31	0.001

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Discussion

The findings demonstrate that agility training, specifically through zigzag cone drills, significantly improves dribbling ability in youth football players aged 12–14 years. Prior to the intervention, students' average dribbling scores were relatively low, and many struggled with ball control and maneuvering past opponents. After four weeks of agility-focused training, the students showed substantial progress in speed, balance, and control while dribbling.

These results are consistent with previous studies. For instance, (Padrón-Cabo et al., 2020) found that ladder drill variations improved dribbling agility. Similarly, (Pamungkas, 2024) reported that zigzag and 15-yard turn drills enhanced dribbling skills, (Juhanis et al., 2024) also confirmed the significant impact of agility training using ladder and cone drills on ball control and dribbling.

The current study shares methodological similarities with the aforementioned research, especially in its use of agility-based training to improve specific football techniques. However, it contributes new data from a different setting—SSB Satria Mandala FC in Campursari—thereby expanding the generalizability of such training methods in various regional contexts. Despite some logistical challenges, such as attendance inconsistencies due to distance between villages, the intervention effectively improved participants' technical skills, particularly dribbling. These findings suggest that incorporating structured agility drills into youth football training can be an effective strategy to enhance fundamental technical abilities such as dribbling, which are essential for both individual performance and team success in the sport.

Conclusions

This study investigated the effect of agility training on dribbling ability in youth football players aged 12–14 years at SSB Satria Mandala FC in Campursari Village. The findings confirmed that the implementation of agility-based drills—specifically zigzag cone drills—significantly improved the players' dribbling performance. The pretest average score of 18.81 increased to 24.69 in the posttest, with a statistically significant difference ($p = 0.001$). This improvement highlights the effectiveness of agility training in enhancing technical football skills, particularly dribbling, which requires a combination of speed, coordination, and balance.

The study supports the integration of agility-focused exercises into regular football training programs for youth. Coaches and trainers working with similar age groups may consider adopting similar interventions to improve their players' individual performance and overall team competitiveness. Future studies could explore long-term effects or compare different agility methods to determine the most effective approach for various skill levels.

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