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The Effect of Ladder Drill Side Right In Training on Increasing the Agility of the Futsal Team of SMKN 1 Kandangan

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Abstract

This study aims to determine the effect of ladder drill side right in training on improving agility in the futsal team of SMK Negeri 1 Kandangan. Pre-experimental was used as the research method and Pretest and Posttest in One Group as the research design. All 16 members of the SMK Negeri 1 Kandangan futsal team were the population of this study. Illinois Agility Run Test is an instrument used to measure agility. The results of the t-test analysis showed that after receiving ladder drill side right in training, the player's agility increased significantly, with the value of tcount = 15.96 which is greater than ttable = 2.13. In conclusion, the agility of the SMK Negeri 1 Kandangan futsal team increased due to ladder drill side right in training. Suggestions for coaches are to apply this form of training in a structured and disciplined manner.

Keywords: Agility, futsal, ladder drill, physical training, SMK Negeri 1 Kandangan.

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A. Introduction

Sports have been a crucial component of human life from ancient times to the present day. Throughout its history, sports have not only served as a means of recreation and entertainment but also as a platform for promoting health, fostering social values, and even as a tool for diplomacy between nations (Ahady *et,al*. 2024). Sports can form individuals who are physically and intellectually healthy, with strong personalities, discipline, and sportsmanship, which in turn produce quality humans who are able to lift the dignity and honor of the nation. (Iqbal, 2020). As the expression mens sana in corpore sano (meaning that in a healthy body there is a strong soul), sports are very important for maintaining human health and fitness. There are three categories of sports coaching and development, as stated in the Law of the Republic of Indonesia No. 3 of 2005 Chapter 6 Article 17: 1) Educational sports, 2) Recreational sports, and 3) Sports achievement (Chandra *et al.*, 2021).

This is supported by the National Sports Law Number 3 of 2005 Chapter I Article 1 Paragraph 13 concerning the Scope of Sports which reads as follows: "Achievement sport is a sport that fosters and develops athletes in a planned, graded, and sustainable manner through competition to achieve achievements with the support of sports science and technology" (Lago-Fuentes *et,al.* 2020). Futsal is a sport that gets great enthusiasm from the wider community, both from the general public, educational institutions such as schools, to various agencies and specially formed futsal clubs.

Futsal is a team sport played by five players, aiming to score goals against the opponent's goal. (Spyrou *et al.*, 2020). This sport can be done outdoors or indoors, with the size of the futsal field being 40x20 meters. (Romero-caballero *et al.*, 2020). Futsal is characterized by high-intensity and dynamic play, requiring skill and optimal physical condition. (Berhimpong *et al.*, 2023; Pratama *et,al* 2024; Sekulic *et,al* 2019; Tanyeri & Öncen, 2020). Factually, when compared to soccer, the level of technical competence of futsal players is higher, which is reflected in a greater number of goals as well as a higher speed of play (Juniarsyah *et al.*, 2021; Dimyati *et al.*, 2023; Echavarria & Sánchez, 2022; Sridadi *et al.*, 2021).

In the context of the futsal team at SMK Negeri 1 Kandangan, it is not only important to focus on technical, tactical and mental training, but also to pay serious attention to the physical aspects of the players. These physical aspects include speed, endurance, agility and strength, all of which contribute significantly to the team's overall performance. This comprehensive

and integrated training is expected to improve the ability and competitiveness of the SMK Negeri 1 Kandangan futsal team in various competitions.

According to (Rachman,A, 2020) said that strength, endurance, muscle explosiveness, speed, flexibility, agility, coordination, balance, accuracy, and responsiveness are elements of physical condition. Therefore, speed and agility are very important in futsal. Since the game in futsal is very fast, unlimited substitutions are allowed during the match and matches are limited to two periods of 20 minutes each (Pranyoto, 2020).

SMK Negeri 1 Kandangan futsal squad players have a lot of promising potential, but still have to continue to develop physically, especially speed. This is due to the absence of special training for agility, the lack of player discipline in participating in training, and the absence of a structured agility training program. This situation is contradictory as stated Sanusi, 2020) which states that "There needs to be programmed physical training for players to improve their physical condition which is below standard. Programmed training will increase the strength, speed, coordination, agility, and endurance of athletes". Physical components including stamina, speed, strength, coordination, and agility are necessary for all fundamental futsal training approaches. To achieve the best results, it is necessary to drill these physical condition components in a planned manner.

Many factors affect agility, including speed and balance, which greatly affect agility ability. (Pamungkas *et al.*, 2023). A person is unable to move agilely without elements of both speed and balance. With that in mind, it is necessary to incorporate speed and balance training when practicing agility. Speed is always related to response time, frequency of movement per unit time, and speed over a given distance are included in relation to speed of movement because the element of speed is always based on the basic idea of the ratio between time and distance. (Bompa & Buzzichelli, 2022; Hendrawan Koestanto *et al.*, 2017).

According to Putra (2022) explains that 1) Somatic factors, 2) Age factors, 3) Gender factors, 4) Weight factors, and 5) Fatigue factors are some of the factors that affect physical agility. Certain body gestures usually show prominent agility and show rapid changes in movement. The typical lifestyle of adolescents can lead to a decrease in physical agility, which can lead to disruption of their activities.

Based on the needs analysis, it is found that the agility of SMK Negeri 1 Kandangan futsal players has a poor time

value, ineffective techniques and playing styles that make it very easy for opponents to fight for the ball. The coach of the SMK Negeri 1 Kandangan futsal squad claims that the players' technical abilities and monotonous playing style make it easy for opponents to steal the ball. This is especially true in terms of agility. This issue highlights the need to provide more organized and methodical training to the SMK Negeri 1 Kandangan futsal squad to improve the physical attributes of the players, particularly their speed. (Ilham et,al 2024) defines agility as the ability to move and change direction quickly and accurately without losing balance. When players move without the ball to create space, find gaps, and pass opponents while dribbling to get past tight defenses, agility is very important in futsal games. Therefore, improving agility through planned training is essential to improve the performance level of the SMK Negeri 1 Kandangan futsal team.

One form of exercise that can increase the quality of futsal players' agility with the *ladder drill side right in* exercise form. The following problems are noted based on the background of the problem: inability to follow up on training commitments; lack of agility training and unplanned agility in the SMK Negeri 1 Kandangan futsal squad.

A ladder-shaped object made of plastic and rope is used in the ladder drill method. It is implemented by extending it to the floor. To do this exercise, step one or two feet into the box that has been made by the ladder drill. The use of the ladder drill tool is expected that athletes move agilely according to their abilities. There are three different approaches to ladder drill training: reserve crossover, two forward one back, and icky shuffle. (Ilham *et al.*, 2024; Makadada *et al.*, 2024.

The hope is that to ensure the entire SMK Negeri 1 Kandangan futsal squad can display their best skills when competing or just playing, as well as having a strong body, especially in terms of agility, improvements in their training are needed. Currently, many players show less attractive techniques and styles of play and tend to be monotonous, so the ball is easily captured by the opponent. This problem requires a more regular, planned, and structured training program for the SMK Negeri 1 Kandangan futsal team so that the players' physical condition, especially agility, can improve. According to (Ilham et,al 2024) he ability to move and change direction quickly and accurately without maintaining balance is called agility. When players move without the ball to create space, find gaps, and pass opponents while dribbling and breaking through tight defenses, agility is very important in futsal games.

Therefore, increasing agility through

well-programmed training is needed to improve the performance of the SMK Negeri 1 Kandangan futsal team. With structured and disciplined training, it is hoped that each player can show their best performance, contribute maximally to the team, and bring the SMK Negeri 1 Kandangan futsal team to proud achievements.

So based on the analysis of the needs obtained in this study, the authors will examine the effect of *ladder drill side right in* training on increasing the agility of the SMK Negeri 1 Kandangan futsal team.

B. Methods

The method used in this research is pre-experimental. The research design used *Pretest and Posttest in One* Group (Krisnhan P, 2024) SMK Negeri 1 Kandangan futsal team totaling 16 people is the population and sample in the study. The sampling technique used *total sampling* technique. The *ladder drill side right-in* exercise was used in this study. (Brown & Ferrigno, 2005). Instrument to take agility data using *illinois agility run* test. (Horička P, 2024). Normality test, homogeneity and ended with t test hypothesis testing are analytical techniques used in this study.

C. Result and Discussion

The *paired* t-test, a parametric statistical analysis technique, was used in data analysis to evaluate the research hypothesis. Before conducting the t-test, the following conditions must be met: (1) normally distributed data distribution determined through normality test; and (2) variance (SD^2) between each group is homogeneous determined through homogeneity test.

The Kolmogorov Smirnov test was used to test the normality of the research data using the *SPSS release* 21 program. (Habibzadeh F, 2024). The distribution of data is said to be normal if the results of the analysis obtained probability (p) is greater than the error rate (0.05).

The results of the analysis of agility *pretest* variables on the futsal team of SMK Negeri 1 Kandangan (X_1) and *posttest* agility on the futsal team of SMK Negeri 1 Kandangan (X_2) with the normality test are summarized in the following table.

Table 1. Normality Test Results

Test of One-Sample Kolmogorov-Smirnov			
		pretest	posttest
N		16	16
Normal Parameters[a]	Mean	18.6813	17.3069
	Std. Deviation	.99732	.91215
Most Extreme Differences	Absolute	.123	.155
	Positive	.123	.135
	Negative	-.078	-.155
Kolmogorov-Smirnov Z		0.492	0.618
Asymp. Sig. (2-tailed)		0.969	0.839

Based on the table above, the *pretest* results of the agility of the SMK Negeri 1 Kandangan futsal squad (X1) have a Kolmogorov Smirnov value of 0.492 using Asymp. Based on Sig. (*2-tailed*) = 0.969> 0.05 then the model is considered normal. In the futsal squad of SMK Negeri 1 Kandangan (X2), the Kolomogrov Smirnov value for agility *posttest* data is 0.618 with Asymp. According to Sig. (*2-tailed*) = 0.839> 0.05, the distribution model is normal. The results of this study indicate that both variable data are normally distributed.

Barlett's test was used to test homogeneity (Odoi B, 2022). The homogeneity test in this study is to test the homogeneity of the combined population variance, namely $H_{0:}\ \sigma x_1^2 = \sigma x_2^2 = y^2$.

The test criteria are as follows: "Reject the Ho hypothesis if $\chi^2 \geq \chi^2$ (1-α)(k-1) where (1-α) (k-1) is obtained from the list of *chi squared* distributions with odds (1-α) and dk = (k-1)" (Suhartawan *et,al* , 2024) The results of the combined homogeneity test of population variances are summarized as in the following table:

Table 2. Results of Homogeneity Test with Bartlett's Test

Hypothesis	Dk	χ Count	χ table (0.05)	Conclusion
$H_0 : \sigma X_1^2 = X\sigma_2^2 = Y\sigma^2$ $H_1 : \sigma X \neq X \neq Y_1^2\sigma_2^2\sigma^2$	1	0,13	3,84	Homogeneous

From the research data to see the effect of *ladder drill side right in* increasing agility, a hypothesis test was conducted. This test is intended to test the average difference in the results of the *pretest* agility of the sample that has not been given the exercise *ladder drill side right in* with the average results of the *posttest* agility of the sample that has been given the exercise *ladder drill side right in*, with the provisions: if the value of $t > t_{(1-\alpha)(n-1)}$ then H_0 is rejected that there is an effect of the test variable and H_1 is accepted that there is an effect of the test variable. Based on the calculation, the results are as shown in the following table: Statistical analysis using

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two average tests, namely the t test (one party test) with the formula:

$$t = \frac{\overline{X}_2 - \overline{X}_1}{S/\sqrt{n}}$$

The test criteria used: "From the Student t distribution list with dk = (n - 1) and odds (1 -α). So we reject H_0 if $t \geq t (1 - \alpha) (n - 1)$". (Sudjana, 1992:231).

From the results of calculations with n = 16-1, the average $\overline{X}_1$ = 18.64 and the average $\overline{X}_2$ = 17.31, and the value of S = 0.34 obtained the value of tcount = 15.96 while the value of $t_{(1-\alpha)(n-1)}$ = 2.13. So that according to the testing criteria, the value of $t_0 > t_{tabel}$ or 3.30 > 2.13 can be concluded that the *ladder drill* exercise *side right in* affects the increase in agility in the futsal team of SMK Negeri 1 Kandangan.

Table 3. Hypothesis Test Results

Variables	$t0_{(count)}$		t_{tabel}	Conclusion
X_1 - X_2	15,96	>	2,13	There is influence

This study reveals that ladder drill side right in training is able to improve agility in the futsal team of SMK Negeri 1 Kandangan. The results of the analysis showed tcount = 15.970 > ttable (15; 0.025) = 2.13, which means the results are significant. Therefore, there is a significant difference between the pre-test and post-test after being given treatment in the form of ladder drill side right in training, so it can be concluded that the training is effective in increasing the agility of the futsal team of SMK Negeri 1 Kandangan.

Thus, this significant t-count value supports the proposed research hypothesis. The research findings show that improving agility with ladder drill side right in training is very effective. Playing futsal requires high agility, in accordance with the opinion of (Ramdani, 2023). (Ramdani, 2023) who defines agility as the ability to change the position or direction of the body quickly while performing other actions. Athletes with high agility are able to move quickly and easily in various directions.

Athletes should use dynamic strength during field training to improve their agility performance. Training at low intensity will not yield meaningful results, therefore there will not be much improvement in performance. The effectiveness of agility training is greatly influenced by the neural reaction and responsiveness of the neuromuscular system.

· Neuromuscular training is another name for this kind of agility training. In terms of agility training, the capacity of the central nervous system to transmit strong and fast impulses such as muscle contraction speed to the muscle fibers is very important.

D. Conclusion

It can be concluded that the ladder drill exercise right side in helps the futsal squad of SMK Negeri 1 Kandangan become more agile based on data analysis, hypothesis testing, and discussion of research findings. The research findings show that the right side drill ladder drill significantly improves the agility of futsal players. Therefore, it is recommended that the coach of the SMK Negeri 1 Kandangan futsal team apply the exercise to improve the agility of the players. In addition, SMK Negeri 1 Kandangan is expected to always apply the principles of training in doing ladder drill side right in order to get optimal results. Other researchers are expected to continue similar research by comparing methods and using more samples to enrich the findings of this study.

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