



The Effect of Agility and Balance on Dribbling Speed of The Aisyah Pringsewu University Football Team

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Abstract

Soccer is a team game, which is very popular with all Indonesians and even the world. Objectives: 1) Training methods between zig-zag run and t-drill in increasing dribbling speed, 2) Differences in high and low balance on increasing dribbling speed, 3) interaction between agility training methods with balance on increasing dribbling speed. This study uses an experimental method with a 2x2 factorial design. The independent variables in this study are zig-zag and t-drill running, high and low balance attribute variables, and the dependent variable is dribbling speed. The population is 36 players. The sampling technique used purposive sampling which amounted to 36 players. Data from the final test were analyzed with two-way ANOVA statistics. The results of calculations using SPSS 25 were obtained: 1) The first hypothesis obtained $F_{count} > F_{table}$ or $86.532 > 3.33$ and a significance value of $0.000 < 0.05$. 2) The second hypothesis obtained $F_{count} > F_{table}$ or $77,184 > 3.33$, and a significance value of $0.000 < 0.05$. 3) The third hypothesis obtained $F_{count} > F_{table}$ or $9.615 > 3.33$, and a significance value of $0.004 < 0.05$. Conclusion: the group treated with the zig-zag run agility training method is better than the tdrill agility training group at dribbling speed. the group that has high balance is better than the group with low balance at dribbling speed. There is an interaction between agility training and balance level on dribbling speed.

Keywords: *Agility, Balance, Dribbling*

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INTRODUCTION

Soccer is certainly one of the most popular sports in the world, from children to parents everyone loves this sport. Soccer is a team sport where each team consists of 11 main players including a goalkeeper. (Mielke, 2007). Football is a team game, in one team consists of eleven core players, and one player plays as a goalkeeper, players use their feet entirely, but specifically for goalkeepers may use their hands in their area, The main goal is to score as many goals as

possible. (Yusuf, Rumini, & Setyawati, 2022). Football is a big ball game played by teams and each team consists of eleven players. (Ali, 2011).

Analysis of soccer matches shows that players master only 2% of the game duration. In professional soccer, the permanent quest for success requires the systematic collection, analysis and interpretation of information gathered on player performance to guide decision-making and generate feedback for training prescriptions and match preparation strategies. In the remaining part, players run without the ball, based on the team's tactical strategy (Coelho E Silva et al., 2010). Soccer is a team game, therefore the need for good teamwork is a demand that must be met by a team that wants a victory. Apart from aiming to score goals, in a soccer game every player needs to pay attention to several aspects that support playing soccer.

In order to achieve this goal, players need to be given several exercises, such as: physical exercise, technical training, tactical training and good mentality so that it will create a directed and regular training and by paying attention to the training program that has been compiled so far. (Hrysomallis, 2011). One aspect that needs to be considered is the basic techniques in playing soccer. There are several basic techniques in soccer which are all able to support cooperation between players. The basic techniques of soccer include kicking, receiving, dribbling, heading, grabbing, throwing techniques, trick moves with the ball, and ball guarding techniques. (Waldron & Worsfold, 2010).

The basic technique that must be mastered by players in creating soccer achievements is the dribbling technique. (dribbling) (Pambudi Rilo, Rahayu, & Rumini, 2021). Not all soccer players can dribble well. According to (Rizkiyanto, Sugiharto, & Soenyoto, 2018) Dribbling is a basic soccer technique that is not easy to master, because players must have the ability to control the ball while moving, standing, or preparing to make a pass or shot. Likewise, the level of difficulty in dribbling is higher because players not only have the ability to keep the ball close to the feet, move with the ball and make passes but are also related to physical conditions, emotional control, weather and mastery of the terrain of the soccer field arena. (Rizal Pratama, Nasuka, & Hadi, 2015), Therefore, special training to improve basic dribbling techniques is very important. This is in line with the opinion (Budiman & Sin, 2019) which states that "dribbling is one of the soccer skills that must be mastered and is needed by soccer players". Some factors that affect the skills of soccer players in dribbling include agility and balance. (Gemael & Kurniawan, 2020). Physical conditions in playing soccer that are indispensable include: strength, speed, flexibility,

balance, coordination, agility, endurance, strength, accuracy and reaction. (Jusran & Maifa, 2018). Agility according to (Artanayasa, 2014) is the ability to change the direction of body position or direction of body movement quickly while moving quickly without losing balance or awareness of body position. In this agility component, it includes elements of dodging quickly, changing body position quickly, moving then stopping and continuing to move as quickly as possible. Agility makes it easier for soccer players to make difficult movements and not easily fall or get injured due to the opponent's encouragement or pressure. The agility of player movement supported by mastery of dribbling techniques can deliver the ball to the opponent's goal easily. (Udam, 2017).

Balance is the body's ability to maintain position, with a variety of movements. According to (Jaya & Nurkholis, 2017) balance is the ability to maintain body position in various movements. This ability to maintain position is very visible in soccer games where players must be able to maintain the ball they control as much as possible. As a result of this opponent's interference, forcing the player to reverse or maintain his body position so as not to fall and lose possession of the ball. The ideal reality as expressed above is that every soccer player must have agility and balance to master skills in dribbling speed. The ability to master skills in dribbling speed in a soccer game, especially the attacking position, is a powerful weapon in an effort to arrange an attack on the opponent's area or goal. Dribbling in a playing situation means carrying the ball according to one line to another using how to control the ball from foot to foot in a narrow space, because the opponent closes the area. This requires good balance as an effort to control all movements and also requires agility to move forward to dribble and escape from the opponent's obstacles.

The ability of players in dribbling speed at UKM Football Aisyah Pringsewu University is still low. In field observations the author conducted an initial test of dribbling speed against 36 players. In conclusion, the results of the initial test show that there are still many players who are in the medium and low categories in terms of dribbling speed at UKM Football Aisyah University Pringsewu. Researchers are interested in this case providing training by emphasizing the speed and balance of players in dribbling which will be outlined in a study entitled "The Effect of Agility and Balance on the Dribbling Speed of the Aisyah Pringsewu University Football Team".

METHOD

The research used in this study is a factorial design. In a factorial design, treatments are arranged in such a way that each individual can be a subject simultaneously in different factors and each factor consists of several levels. Factorial design is part of experimental research consisting of two or more independent variables combined. The experiment referred to in this study is an experimental method using a 2x2 factorial design, using an initial test (pretest) and a final test (posttest). The population in this study were all players in UKM Football Aisyah Pringsewu University which amounted to 36 players. The sample to be used in the study amounted to 36 players of UKM Football Aisyah University Pringsewu. The data from the final test results, namely dribbling speed in UKM Football players at Aisyah Pringsewu University, were analyzed with two-way Anava statistics and hypothesis testing with the calculation of the F test with a significant level of 0.05%, which at the previous stage tested the normality of the sample (Kolmogorov Smirnov test with $\alpha = 0.05\%$) and tested the homogeneity of variance (Leavene's test). The significant level (α) in the study is 0.05 or 5%.

RESULTS AND DISCUSSION

Result

The results of the study of the effect of zig-zag run and t-drill agility training and the level of balance on dribbling speed in soccer games. In this study the sample was divided into 2 groups, namely high and low groups. Both high and low groups will be carried out research in the form of applying agility training. The high group is divided back into 2 groups, high group 1 will do zig zag run agility and high group 2 will do t-drill agility training. Likewise with the low group, low group 1 will do zig-zag run agility training and low group 2 will do t-drill agility training.

Table 1. Description of Soccer Dribbling Speed Data

No	Training Method	Balance	Data Source	Average Dribbling Speed
1	<i>Zig-Zag Run</i>	High	<i>Pretest</i>	21.06
			<i>Posttest</i>	18.44
			Gain Score	2.620
		Low	<i>Pretest</i>	23.38
			<i>Posttest</i>	21.13
			Gain Score	2.250
2	<i>T-Drill</i>	High	<i>Pretest</i>	21.89
			<i>Posttest</i>	19.66
			Gain Score	2.230
		Low	<i>Pretest</i>	23.53
			<i>Posttest</i>	22.48
			Gain Score	2.050

The data normality test in the study used Kolmogorov Smirnov with the help of the SPSS 25.0 program. It is stated that the data is normally distributed if the significance value is > 0.05 . The results of the calculation of the normality test of the data from the initial and final tests of dribbling speed in soccer games can be seen from the table below :

Tabel 2. Normality Test Calculation Results

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Pretest	,133	32	,159	,947	32	,121
Posttest	,125	32	,200*	,945	32	,101

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The conclusion of each dribbling speed data exceeds the value of 0.05, which means that the data is normally distributed.

Homogeneity test in the study was carried out with the Levene test. The homogeneity test is intended to test the similarity of variance between sample group 1 and sample group 2.

Tabel 3. Homogeneity test result

		Levene			
		Statistic	df1	df2	Sig.
Dribbling Speed Results	Based on Mean	3,428	1	30	,074
	Based on Median	3,410	1	30	,075
	Based on Median and with adjusted df	3,410	1	22,513	,078
	Based on trimmed mean	3,420	1	30	,074

The homogeneity test shows a significance value greater than 0.05 ($\text{Sig} > 0.05$) on the dribbling speed variable so that the sample activities are homogeneous. The conclusion of the homogeneity test results is homogeneous.

After the normality test and homogeneity of variance test are carried out, the utilization of ANOVA in data analysis can be done. The final test data was analyzed with two-way ANOVA statistics and hypothesis testing with the calculation of the F test at a significant level of 0.05% which had previously been carried out prerequisite tests. Research hypothesis testing is carried out

based on the results of data analysis and interaction analysis of variance, to find out the differences need ANOVA test, ANOVA summary results show a significant difference.

Tabel 4. Two-Factor ANOVA Summary

Tests of Between-Subjects Effects					
Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1,371 ^a	3	,457	57,777	,000
Intercept	167,537	1	167,537	21180,821	,000
Method_Training_Agility	,684	1	,684	86,532	,000
Level_Balance	,611	1	,611	77,184	,000
Method_Training_Agility * Level_Balance	,076	1	,076	9,615	,004
Error	,221	28	,008		
Total	169,129	32			
Corrected Total	1,592	31			

a. R Squared = ,861 (Adjusted R Squared = ,846)

The first hypothesis, which states that there is an effect of the zig-zag run and t-drill agility training methods on dribbling speed in soccer games at the Aisyah Pringsewu University soccer UKM, was tested using anova test and obtained Fcount = 86.532 with a significance value of 0.000. The results of this calculation are then consulted with the F table with dk numerator = 2 and dk denominator = 29, and a significance level of 0.05 obtained Ftable = 3.33, because Fcount > Ftable or 86.532 > 3.33 and a significance value of 0.000 < 0.05 then H0 which reads: "There is an effect of zig-zag run and t-drill agility training methods on dribbling speed in soccer games at Aisyah Pringsewu University soccer UKM" is accepted. Based on the average posttest value, it shows that the group treated with the zig-zag run agility training method has a greater increase than the group treated with the t-drill agility training method on dribbling speed in soccer games at Aisyah Pringsewu University soccer UKM.

The second hypothesis, which states that there is an effect of high balance level and low balance level on dribbling speed in soccer games at Aisyah Pringsewu University soccer UKM, was tested using the anova test and obtained Fhitung = 77.184 with a significance value of 0.000. The results of this calculation are then consulted with the F table with dk numerator = 2 and dk denominator = 29, and a significance level of 0.05 obtained Ftable = 3.33, because Fcount > Ftable

or $77.184 > 3.33$, and a significance value of $0.000 < 0.05$ then H_0 which reads: "There is an effect of high balance level and low balance on dribbling speed in soccer games at Aisyah Pringsewu University soccer UKM" is accepted. Based on the average posttest value, it shows that the high balance group has a greater improvement rate than the low balance group on dribbling speed in soccer games at Aisyah Pringsewu University soccer UKM.

The third hypothesis, which states that there is an interaction between zig-zag run and t-drill agility training methods with high balance levels and low balance levels on dribbling speed in soccer games at Aisyah University Pringsewu soccer UKM, was tested using anova test and obtained $F_{count} = 9.615$ with a significance value of 0.004 . The results of this calculation are then consulted with the F table with dk numerator = 2 and dk denominator = 29, and a significance level of 0.05 obtained $F_{table} = 3.33$, because $F_{count} > F_{table}$ or $9.615 > 3.33$, and a significance value of $0.004 < 0.05$ then H_0 which reads: "There is an interaction between zig-zag run and t-drill agility training methods with high balance and low balance levels on dribbling speed in soccer games at Aisyah Pringsewu University soccer UKM" is accepted. The results of testing the third hypothesis show significant results between agility training methods and balance levels on dribbling speed in soccer games, which means that there is an interaction between agility training methods and balance levels on dribbling speed in soccer games at Aisyah University Pringsewu soccer UKM.

Tabel 5. The Effect of Zig-Zag Run training and T-Drill training on dribbling speed

Estimates				
Method Training Agility	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Zig-Zag Run	2,434	,022	2,389	2,480
T-Drill	2,142	,022	2,096	2,187

Zig-zag run agility training is better than t-drill agility training to increase dribbling speed, seen from the mean amount in table 4.5. The zig-zag run group has a mean of 2.434, while the t-drill group has a mean of 2.142.

Tabel 6 .The effect between players who have high and low balance levels on dribbling speed

Estimates				
Level Balance	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
High Balance	2,426	,022	2,381	2,472
Low Balance	2,150	,022	2,104	2,196

The mean for a high level of balance on dribbling speed is 2.426, while the mean for a low level of balance on dribbling speed is 2.150. The group that has a high level of balance is better than the group that has a low height category.

Tabel 7. interaction between agility and balance training methods on dribbling speed

Method Training Agility	Level Balance	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Zig-Zag Run	High Balance	2,621	,031	2,557	2,686
	Low Balance	2,248	,031	2,183	2,312
T-Drill	High Balance	2,231	,031	2,167	2,296
	Low Balance	2,053	,031	1,988	2,117

The treatment group using the zig-zag run training method experienced an average increase in dribbling speed of 2.621 for players who had a high level of balance category and 2.248 for players who had a low level of balance category. The treatment group using the t-drill training method experienced an average increase in dribbling speed of 2.231 for players who had a high level of balance category and 2.053 for players who had a low level of balance category. The provision of zig-zag run and t-drill training methods interacted with balance causes the body to experience physiological adaptation, resulting in an increase in the results of dribbling speed.

Based on the explanation above, there is an interaction between agility training and balance on dribbling speed. Players who have a high or low level of balance category are more appropriately given the zig-zag run agility training method than given the t-drill training method.

Discussion

The hypothesis test results show that there is a difference in the effect between the zig-zag run and t-drill agility training methods on dribbling speed in soccer games. The results show that the group treated with the zig-zag run training method has a greater improvement rate than the t-drill agility training method group. The conclusion is that agility training with the zig-zag run method has a better effect on dribbling speed in soccer games compared to t-drill agility training at UKM Sepak Universitas Aisyah Pringsewu.

There is a difference in the effect of high and low levels of categorized balance on dribbling speed. Players who have a high category of balance have an average increase in dribbling speed greater than players who have a low category of balance. Players who have a high level of balance category experience an average increase in dribbling speed of 2.426, while players who

have a low level of balance category experience an average increase in dribbling speed of 2.150. The average increase in dribbling speed is better for players who have a high level of balance category than for players who have a low level of balance category. To increase dribbling speed a high level of balance is required. So it can be concluded that there is a difference in the effect between high and low balance levels on dribbling speed in soccer Games (Zago et al., 2016).

There is an interaction between agility and balance training methods on dribbling speed at UKM Sepak Universitas Aisyah Pringsewu. The treatment group using the zig-zag run training method experienced an average increase in dribbling speed of 2.621 for players who had a high level of balance category and 2.248 for players who had a low level of balance category. The treatment group using the t-drill training method experienced an average increase in dribbling speed of 2.231 for players who had a high level of balance category and 2.053 for players who had a low level of balance category. The provision of zig-zag run and t-drill training methods interacted with balance causes the body to experience physiological adaptation, resulting in an increase in the results of dribbling speed. Based on the explanation above, the conclusion is that there is an interaction between agility training and balance on dribbling speed. Players who have a high or low level of balance category are more appropriately given the zig-zag run agility training method than given the t-drill training method (Purnomo & Irawan, 2021).

CONCLUSION

The conclusion of this study is that there is an influence between zig-zag run and t-drill agility training on dribbling speed in soccer games at UAP Soccer UKM. There is an influence between athletes who have high category balance and those who have low category balance on the results of dribbling speed in UAP Soccer UKM. There is an interaction between agility and balance training on dribbling speed in soccer games at UAP Football UKM.

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