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The Relationship Between Agility; Eye-Foot Coordination; Leg Muscles Strength and Soccer Dribbling Skills of Football School (SSB) Players

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Abstract

Lack of good dribbling skills will affect soccer match victory. The researchers aimed to determine the relationship between eye-foot coordination, leg muscle strength, agility, and the dribbling skills of 20 Football School (SSB) players. Research data were collected using the eye-foot coordination test, leg muscle strength test, mobility test, and dribbling skill test. The data was analyzed using the product-moment correlation and multiple linear regression analysis. The results showed a significant relationship between the eye-foot coordination and dribbling skills of SSB players. Also, there was a substantial relationship between leg muscle strength and dribbling skills of SSB players. Furthermore, there was a significant relationship between agility and dribbling skills of SSB players. Lastly, SSB players had a significant relationship between eye-foot coordination, leg muscle strength, agility, and dribbling skills. This study concludes that good dribbling skills become the basic requirement for soccer players.

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INTRODUCTION

Not every soccer player has a good physical condition. Some do not have a good physical condition. Uneven physical conditions will make the team weak because soccer is a team sport that relies on teamwork (Arridho et al., 2021; Cariolo et al., 2019; Giménez et al., 2020; Misbahuddin & Winarno, 2022). Almost all players rely on foot skills, except for the goalkeeper, who can play a free ball using all his limbs in the penalty area. Therefore, physical condition is also very important for soccer players (Firmansyah et al., 2021; Ridwan, 2020; Roberts et al., 2020). Foot skills need to be honed so that every player has a good ball feeling since ball feeling invites football players to use sense in controlling the ball (Atiq et al., 2021; Sibarani & Manurung, 2021). Therefore, a great soccer player requires good dribble control, timing, and speed (Clemente et al., 2020; Darendeli et al., 2021; Los Arcos et al., 2019). For this reason, every player needs to practice to become a reliable player with good dribbling techniques.

There are many elements to improve the physical condition to improve performance. It is intended that the athlete's physical ability increases towards peak conditions and is useful for carrying out sports activities in achieving maximum performance. A supporting factor that is very important for mastering football skills is the physical elements or physical abilities, consisting of speed, coordination, strength, endurance, flexibility, and balance (Millis et al., 2014; Reiman, 2001; Ruivo et al., 2016). This research examined the elements of agility, eye-foot coordination, and leg muscle power. These three elements are the combined essential elements that a soccer player must have to become a professional. Agility is a very complex quality that contains the interaction of other physical attributes (reaction speed, speed, strength, flexibility, motor skills, and so on) (Bullock et al., 2012; Köklü et al., 2015) while coordinating the ability to perform movements with various levels of difficulty quickly, efficiently, and with full accuracy (Febi & Afriandi, 2020). Power is the ability to perform explosive movements. It is a combination of speed and strength. These three things need to be a concern for coaches in developing young soccer players to achieve optimal performance.

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Several studies related to ball dribbling agility have been carried out by many researchers (Fatahillah, 2018; Gunawan et al., 2016; Hartati et al., 2020; Marta & Oktarifaldi, 2020; Shabih et al. al., 2021; Suganda, 2021; Wali & Rusli, 2022). The studies explain that the ball dribbling agility in soccer greatly influences a soccer team's attacking speed. Several researchers have also carried out other studies related to eye-foot coordination in dribbling (Fajrin et al., 2021; Hasbillah & Herman, 2021; Rahmatullah, 2021; Syarif & Suardi, 2019). Some of these studies conclude that eye-foot coordination when dribbling effectively contributes to a player managing the ball. Besides several researchers also carried out other studies related to the contribution of leg muscle power during soccer dribbling (Patraserasah, 2017; Sudirman, 2018). These studies state that the better the leg muscle strength of soccer players, the better the dribbling skill. However, studies linking agility, eye-foot coordination, leg muscle power, and dribbling skill have not been carried out by other researchers. Therefore, this research looked for the relationship between agility, eye-foot coordination, leg muscle power, and the dribbling skills of soccer players. Dribbling in soccer is essential because it is the initial capital and basic technique for players to bring the ball towards the opponent's goal. Each player must also master this ball possession technique well to make it easier to pass the opponent.

METHOD

The research method used was a descriptive method with a correlational study to determine the relationship and level of relationship between two or more variables without any attempt to influence these variables. Therefore, there is no variable manipulation (Ismail, 2018; Roflin & Zulvia, 2021; Susanti et al. ., 2019). The sample consisted of 20 soccer players from SSB Sadiwa FA Bumiayu within one month of the research duration. The researchers used a standing jumping board to measure leg muscle strength. The test used to measure agility was the dogging running test. Furthermore, the Mitchel Soccer Test was used to measure eye-foot coordination. Lastly, the dribbling test was used to measure dribbling skills using. The researchers employed prerequisite tests which consisted of the normality and linearity tests. The research hypothesis testing consisted of (1) simple correlation using SPSS Software and (2) the Multiple Regression Analysis. The researchers used the following criteria to determine whether or not there is a significant relationship: if the significance value (p) is lower than 0.05, then there is a significant relationship between the two variables; if the significance value (P) is p higher than 0, 05, then there is no significant relationship between the two variables (Jonathan Sarwono, 2010). The research design is presented in Figure 1:

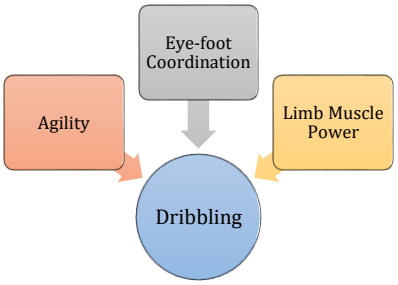

Figure 1. Research Design

RESULTS AND DISCUSSION

Results

Prerequisite Test: Normality test

Table 1. Normality Test Results

No	Tested Data	Kolmogorov-Smirnov Statistics	Sig.	Description
1	Agility (X1)	0,146	0,200	Normal
2	Leg muscle strength (X2)	0,153	0,200	Normal
3	Eye-foot coordination (X3)	0,185	0,72	Normal
4	Dribbling skill (Y)	0,141	0,200	Normal

The results of the analysis above show that all variables are normally distributed because the significance value is higher than 0.05.

Linearity Test

Table 2. Linearity Test Results

No	Functional Relationship	$F_{observed}$	Sig.	Description
1	Agility (X1) and Dribbling Skills (Y)	0,266	0,954	**Linear**
2	Leg Muscle Strength (X2) and Dribbling Skills (Y)	0,347	0,944	**Linear**
3	Eye-foot Coordination (X3) and Dribbling Skills (Y)	0,340	0,846	**Linear**

The results of the analysis above show that all variables are declared linear because the significance value is higher than 0.05.

Hypothesis testing, The relationship between agility and the dribbling skill of SSB Sadiwa FA Bumiayu players can be seen in Table 3.

Table 3. The Correlation between Agility and Dribbling Skill

Variable	R	Sig.	Conclusion
X1-Y	0,599	0,005	Significant

Based on the product-moment correlation analysis results, the coefficient rX1-Y is 0.599, where the p-value is 0.005 (lower than 0.05). Thus, the first hypothesis, "There is a relationship between agility and dribbling skills of SSB players Sadiwa Bumiayu" is accepted. The relationship between leg muscle strength and the dribbling skill of SSB Sadiwa FA Bumiayu players can be seen in Table 4.

Table 4. The Correlation between Limb Muscle Strength and Dribbling Skill

Variable	R	Sig.	Conclusion
X2-Y	-0,792	0,000	Significant

Based on the product-moment correlation analysis results, the coefficient rX2Y is 0.792, where the p-value is 0.000 (lower than 0.05). Thus, the second hypothesis, "There is a significant relationship between leg muscle strength and dribbling skill of SSB Sadiwa Bumiayu players," is accepted. The relationship between eye-foot coordination and dribbling skills of SSB Sadiwa FA Bumiayu players can be seen in Table 5**.**

Table 5. The Correlation between Eye-Foot Coordination and Dribbling Skill

Variable	R	Sig.	Conclusion
X3-Y	-0,715	0,000	Significant

Based on the product-moment correlation analysis results, rX1Y is -0.715, where the p-value is 0.000 (lower than 0.05). Thus, the hypothesis, "There is a relationship between eye-foot coordination and dribbling skill of SSB Sadiwa Bumiayu players," is accepted. The relationship between agility, leg muscle strength, eye-foot coordination, and dribbling skill of SSB Sadiwa FA Bumiayu players can be seen in Table 6.

Table 6. The Correlation between Agility, Limb Muscle Strength, Eye-Foot Coordination, and Dribbling Skill

Variable	R	r^2	Sig.	Conclusion
X1, X2,X3-Y	0,814	0,639	0,000	Significant

Based on the results of multiple regression analysis, the multiple correlation coefficient (R) is 0.814 and R^2 is 0.316, where the p-value is 0.000 (lower than 0.05). Since the p-value is lower than 0.05, the double correlation coefficient was significant. It means there is a significant relationship between eye-foot coordination, leg muscle strength, agility, and the dribbling skill of SSB Sadiwa Bumiayu players.

The analysis reveals that the hypothesis, "There is a relationship between eye-foot coordination, leg muscle strength, agility and dribbling skill of SSB Sadiwa FA Bumiayu players," is accepted.

The joint influence's determinant coefficient (R^2) is 0.639 or 63.9%. These results indicate that eye-foot coordination, leg muscle strength, and agility contribute effectively to the dribbling skills of the soccer players of SSB Sadiwa FA Bumiayu by 63.9%. In comparison, the rest (36.1%) is determined by variables that are not investigated in this research.

Discussion

There is a relationship between agility and the dribbling skill of SSB Sadiwa FA Bumiayu players. Data analysis and third hypothesis testing prove a significant relationship between the agility and dribbling skills of SSB Sadiwa FA Bumiayu players. This significant relationship means that the better the agility, the better the dribbling skill. Conversely, the lower the agility, the worst the dribbling skill. The results are relevant to previous research conducted by Irawan et al. (Irawan & Hariadi, 2019), which found a significant relationship between speed and dribbling skills and a significant relationship between agility and dribbling skill. Agility is the ability to change the direction and position of the body quickly and precisely when moving without losing balance and awareness of body position (Sapulete, 2012). Lubis (Lubis, 2013) states that agility is a complex set of skills performed by a person to respond to external stimuli with deceleration, change of direction, and reacceleration. One of the basic aspects of soccer is agility. It is necessary and must be mastered by players to beat opponents.

There is a relationship between leg muscle strength and the dribbling skill of SSB Sadiwa FA Bumiayu players. The results of data analysis and testing of the second hypothesis show a significant relationship between leg muscle strength and dribbling skills of SSB Sadiwa FA Bumiayu players. This significant relationship means that the better the leg muscle strength, the better the dribbling skill. The finding is relevant to previous research (Ramadhan et al., 2020). They found that leg muscle explosive power correlates significantly with dribbling skills. Leg muscle strength is the ability of a group of muscles to carry out explosive power to move. The soccer game is dominated by running, dribbling, and kicking. The role of the legs in running, dribbling, and kicking the ball is significant. Therefore, the leg muscle group is the main supporting factor for good dribbling success. According to Ismaryati, power concerns the strength and speed of dynamic and explosive muscle contractions. It involves the expenditure of maximum muscle strength in the fastest time (Sudirman, 2018). In the elements of physical condition in soccer games, muscle power is a very important supporting factor for mastering soccer skills.

There is a relationship between eye-foot coordination and the dribbling skill of SSB Sadiwa FA Bumiayu players. The data analysis and hypothesis testing results show a significant relationship between eye-foot coordination and dribbling skills of SSB Sadiwa FA Bumiayu players. This significant relationship means that the better eye-foot coordination, the better the dribbling skills. Conversely, the lower the eye-foot coordination, the lower the dribbling skills. This finding is relevant to previous research (Jusrianto & Wulandari, 2020). They found a significant correlation between body balance and eye-foot coordination in dribbling skills. One aspect of physical fitness that supports the game of soccer is coordination. Coordination can be defined as the ability to combine two or more movement patterns to achieve a complex movement skill goal. Coordination has an important role in the dribbling skill. According to (Nurhidayat et al., 2019), coordination is the alignment of work in muscle groups smoothly and precisely in carrying out activities that are shown with a high level of skill. With good eye-foot coordination, soccer players can strike goals.

There is a relationship between agility, leg muscle power, eye-foot coordination, and the dribbling skill of SSB Sadiwa FA Bumiayu players. The results of testing the fourth hypothesis prove a significant relationship exists between eye-foot coordination, leg muscle strength, agility, and the dribbling skill of SSB Sadiwa FA Bumiayu players. The determinant coefficient (R^2) of eye-foot coordination, leg muscle strength, and agility is 0.639 or 63.9%. It means that eye-foot coordination, leg muscle strength, and agility contribute (effective contribution) to the dribbling skills of SSB Sadiwa FA Bumiayu players. These three components are the main factors for improving dribbling skills.

CONCLUSION

The relationship between agility, eye-foot coordination, leg muscle strength, and the dribbling skill of soccer players is interrelated. When soccer players dribble using agility, eye-foot

coordination, and leg strength, they will produce an attack speed towards the opponent. This skill needs to be trained optimally so that the dribbling of every player in a club will make the club productive in scoring goals and have good ball control coordination.

AUTHOR CONTRIBUTION STATEMENT

MIA took the lead in composing the manuscript. N oversaw the research lab, created the training curriculum, and gathered information. GYD proofread the articles and took part in the data analysis. The final draft of the paper was read and approved by all authors.

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