

The relationship between agility and dribbling skills among futsal players



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ABSTRACT

Background: Futsal is a popular sport in Indonesia, including Denpasar and Bali. This sport requires agility and high-skill techniques. Futsal requires players' skills in dribbling the ball well. Agility, the ability to move quickly and agilely, is an important physical component in futsal players, especially when dribbling. This study aimed to identify the relationship between the level of agility and dribbling skills in futsal players.

Methods: The research design was observational analytic with a cross-sectional approach. The sampling technique used was *consecutive sampling*. The inclusion criteria for this study were futsal players aged 18-22. In contrast, the exclusion criteria were injuries in the leg region. The total number of respondents who participated in this study was 83 people. The research location is in Denpasar City, Bali. Data was collected from September until December 2023. Data were collected by measuring agility and dribbling skills. Agility was calculated using the Illinois agility test measurement instrument, while dribbling skills used the dribbling test measurement instrument.

Results: Based on the *Spearman rho* non-parametric analysis test, the $p\text{-value} = 0.000$ ($p < 0.05$) and the correlation coefficient $r = 0.642$.

Conclusion: There was a relationship between agility and dribbling skills in futsal players in Denpasar.

Keywords: agility, dribbling, futsal, sport.

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INTRODUCTION

Futsal has become a popular sport around the world in recent years. Futsal comes from the Spanish word *futbol*, which means football, while *sala* means room.¹ The game was originally born in Montevideo, Uruguay, around the 1930s, introduced by Juan Carlos Ceriani, a football coach. The game began when Juan wanted to move football training indoors because of the slippery field conditions after the rain. The indoor training proved to be effective, resulting in the creation of a five-a-side, five-player indoor football game.² Futsal is often called mini football because the game is almost similar to football, but the number of players and the field area are smaller.³

Futsal Indonesia is ranked 41st in the world and 7th in Asia, signaling significant progress in the development of the sport in the country.⁴ Despite challenges, such as a lack of adequate infrastructure and limited resources, Denpasar, as a representation of other cities in Indonesia, shows strong

enthusiasm for adopting and advancing futsal. With futsal courts scattered in various locations and the organization of local to international tournaments, the community spirit and competitive spirit continue to grow. To further improve performance, there is a need to focus on developing skills such as agility and dribbling through structured training programs and investment in supportive infrastructure.⁵

The agility of playing futsal is key in every movement skill, while dribbling is a basic technique often used by players to outwit opponents and damage the opponent's defense.^{6,7} Various factors, including team composition, influence victory. If a team has players with high agility, it shows that the team has an advantage in playing techniques such as dribbling; this technique is a strong basis for the team to win the match.^{8,9} This can be an input for futsal clubs to be able to penetrate championships at the national level and the international level.

METHODS

The study utilized an analytic cross-sectional study design. Sampling in this study employed non-probability sampling techniques with consecutive sampling models. The study population comprised futsal players who were members of a futsal group in Denpasar. The respondents were 83, and agility was measured using the Illinois agility test and dribbling skills test.

Agility measurement can be performed using the Illinois Agility Test, which has a validity value of 0.90 and a reliability value of 0.94. The rating categories for adult males are as follows: Awesome (<15.2 seconds), Very Good (15.2-16.1 seconds), Good (16.2-18.13 seconds), On Track (18.2-19.3 seconds), and Let's Work on It (>19.3 seconds). The dribbling test by Dewi and Pakpahan (2018) measured ball dribbling skills in futsal players. This test had a test-retest reliability value of 0.89 and was tested on futsal athletes. The score categories (in seconds) were as follows:

Excellent ($X < 11.91$), Good (11.91-13.20), Fair (13.21-14.50), Poor (14.51-15.80), and Very Poor (> 15.80).

Inclusion criteria were futsal players aged 18-22 years, male, who had participated in previous competitions and were willing to participate in the study. Exclusion criteria included subjects who withdrew from the study and had injuries or injuries in the last three months. Data analysis was conducted using SPSS, and the data obtained were analyzed using the Spearman Rho test.

The study received approval from the Ethics Commission of the College of Medicine, Universitas Udayana, under SK number 998/UN14.2.2.VII.14/LT/2023 following a comprehensive review. Each participant voluntarily consented to take part in the research, willingly providing their agreement. Furthermore, participants signed an informed consent document indicating their understanding of the study's aims, procedures, and possible risks.

RESULTS

The characteristics of respondents can be seen in Table 1, which contains age and gender. The highest age is 18, namely 29 respondents (34.9%), and adult male participants aged 18-22 years, as many as 83 respondents (100%). Agility with the distribution of the good category (37.3%), followed by the Let's work on its category (28.9%), on track (25.3%), and very good (8.44%) is stated in Table 2. The distribution of dribbling skills can be seen in Table 3, with the highest distribution in the category of poor (36.1%), followed by the categories of excellent (21.7%), moderate (15.7%), good (14.5%) and poor (12%).

The non-parametric analysis of Spearman Rho was used to determine the relationship between agility and dribbling skills. The analysis test results can be seen in Table 4, which found a significance value of 0.000 ($p < 0.05$), indicating a significant relationship between the two variables, namely agility and dribbling skills in futsal players. In addition, the correlation coefficient obtained is 0.642 with a positive value. This positive value identifies the two variables with a unidirectional relationship with a strong correlation level because the

Table 1. Frequency distribution of subject characteristics

Characteristics	Amount	Frequency	Percentages (%)
Age	18	29	34.9
	19	17	20.5
	20	21	25.3
	21	8	9.6
	22	8	9.6
	Total	83	100
Gender	Men	83	100
	Total	83	100

Table 2. Distribution of agility in research subjects

Agility	Frequency	Percentage (%)
Awesome	0	0
Very good	7	8.4
Good	31	37.3
On track	21	25.3
Let's work on it	24	28.9
Total	83	100

Table 3. Distribution of dribbling skills in research subjects

Dribbling skills	Frequency	Percentage (%)
Very good	18	21.7
Good	12	14.5
Medium	13	15.7
Less	10	12.0
Very less	30	36.1
Total	83	100

Table 4. Relationship between agility and dribbling skills

Correlation	Correlation Variable	p-Value
Agility	0.642	0.000
Dribbling skills		

correlation value is 0.51-0.75. This means that the higher the agility, the higher the dribbling skills in futsal players.

DISCUSSION

Respondents with excellent dribbling skills also demonstrated superior agility, reflected in their ability to coordinate movements, body flexibility, and motor control.¹⁰ These dribbling skills are closely related to body flexibility and the ability to change positions quickly.¹¹ Core stability also plays an important role in maintaining stability during activities, especially in futsal games. Strong core muscles, including the hamstring muscles, are crucial in maintaining optimal posture when dribbling and facing pressure from opponents.¹² Hamstring muscles help maintain body balance and allow players to control movement and cope with

pressure without losing control.¹³

In addition, fast movements and sudden changes in direction require a strong propulsive force, thus requiring explosive muscle components. Leg strength is one of the components of fitness and has a very important influence. Leg muscle strength or explosive power is the ability of muscles to overcome obstacles with strength and high speed in one movement.^{14,15} In this case, when performing dribbling movements, the legs, especially the legs, use their muscles to produce explosive power in a certain working time, so to be able to dribble the ball when performing dribbling movements, the legs must require muscle strength.¹⁶

Dribbling agility involves movement when changing movements. This movement change mechanism requires alternating changes in momentum and speed reduction. Momentum is mass

multiplied by speed. Players have relatively constant mass, but speed can be built through regular training and progressive development.⁹ Agility has a significant influence on the ability to play because the characteristics of the futsal game are dynamic and very fast, so agility becomes a component of physical condition that is needed by players when dribbling.¹⁷

This is very relevant to the results of research conducted by Darmawan et al. (2020), which discusses the contribution of agility and dribbling skills. Of the 30 respondents who had been studied, it was found that the value reached 31.6% of the contribution of agility to dribbling skills. Based on this, it is concluded that agility has a significant influence on dribbling skills, and increasing agility will have a positive impact on dribbling skills.¹⁸

The results of research conducted by (Mudian and Prasetyo, 2023) used an *agility* measurement instrument, namely the Illinois agility run test, and a measuring instrument for dribbling skills, namely the dribbling results test. In interpretation, agility has a very strong positive correlation with futsal dribbling skills, contributing 85.4%. Changing position while dribbling, either walking or running, is important to avoid opponents. In this case, dribbling skills must be supported by physical needs such as agility.¹⁹

Agility plays an important role in performing feints while dribbling. Deceptive movements require precise control of accuracy, speed, and accuracy. According to research by Nugroho (2005), the agility variable shows a regression coefficient of 1.531. The t-test results show a t-count value of 2.905 with a probability of <0.008 ($\alpha = 0.05$), which signifies significance. This analysis shows that the higher the agility of a football player, the more the speed in dribbling increases. Agility is a key factor that affects a player's ability to move efficiently.²⁰

This study found a relationship between agility and dribbling skills in futsal players. These results are supported by research conducted (by Purnomo and Irawan, 2021), which found a significant relationship between agility and skills in dribbling on the team, namely, the better the agility, the better the player's dribbling skills.^{21,22}

Researchers have several limitations in this study. Namely, this research only looks at the relationship between agility and dribbling skills in futsal players. At the same time, other variables such as body anthropometry, physical activity levels, and subject hormones have not been controlled by researchers. This study also did not measure the respondents' fatigue level, so it was unknown how tired the respondents were from one test to another.

CONCLUSION

Based on research on the relationship between agility and dribbling skills in futsal players, it can be concluded that there is a significant relationship between the two variables. In addition, the results obtained show that the higher the agility value, the higher the dribbling skills in futsal players with a strong correlation level.

ETHICAL CLEARANCE

The Research Ethics Commission of the Faculty of Medicine, Udayana University, stated that this research was ethically feasible with number 998/UN14.2.2.VII.14/LT/2023.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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AUTHOR CONTRIBUTIONS

KAS developed the research design, collected and processed data, and wrote the manuscript. NKAJA, IWS, and MW directed data collection and revised the manuscript.

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