

## METER RUNNING SPEED OF UNIVERSITY STUDENTS: BASKETBALL DRIBBLING ABILITY

Suwardi

Universitas Negeri Makassar, Indonesia

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### ABSTRACT

This study aims to analyze the effect of 30-meter running ability on the basketball dribbling ability of students of the Sports Coaching Education Study Program, UPRI Makassar. The research method uses a quantitative approach with a correlational design. The research sample consisted of 22 PKO UPRI Makassar students. We collected data using a 30-meter running speed test and a basketball dribbling ability test. Data analysis used a linearity test and regression test. The results showed an R-squared value of 0.014, meaning that 30-meter running speed for basketball dribbling ability was not significant. We conclude that the basketball dribbling ability of PKO UPRI Makassar students remains unaffected by a significant value of 0.605, which is greater than 0.05. The conclusion is that there is no significant effect between 30-meter running ability and basketball dribbling ability among PKO UPRI Makassar students. This finding is contrary to several previous studies that stated a close relationship between running speed and basketball dribbling skills.

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### Corresponding Author:

Suwardi,

Universitas Negeri Makassar, Indonesia

Email: [suwardi6603@unm.ac.id](mailto:suwardi6603@unm.ac.id)

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## 1. INTRODUCTION

Basketball is one of the most popular and rapidly growing sports in various countries, including Indonesia (Aarts et al., 2021; Sofyan et al., 2022; Prasetyo et al., 2022). Various complex technical skills, including dribbling ability, largely determine success in basketball (Arias-Estero, 2013). Dribbling is a critical aspect in basketball that requires a combination of motor coordination, ball control, and player movement speed (Wang et al., 2024).

In the context of higher education, Sports Coaching Education students have a strategic role in developing sports skills, especially basketball (Zhou, 2022; Iserbyt et al., 2023; Portaz et al., 2024). Dribbling skills are not just basic techniques but are an important component that determines a player's performance in mastering the game (Song & Fan, 2022; Nurparisi et al., 2024). The ability to control the ball while moving quickly requires optimal physical condition and coordination (Ivanović et al., 2022).

Running speed is one of the determining factors that affects the quality of dribbling in basketball (Vencúrik et al., 2021; Gou & Li, 2023; Ivanović et al., 2022). The faster a player runs, the more dynamic his ability to control the ball and pass defenders. Previous studies have shown that there is a significant correlation between running speed and technical skills in sports games (Bogdanis et al., 2007; Yilmaz, 2014; Firmansyah et al., 2017).

Initial observations at the Sports Coaching Education Study Program, revealed an intriguing phenomenon involving the variation in students' dribbling abilities. Some students seemed very skilled at controlling the ball, while others still had difficulty controlling it while moving quickly. This gap encourages the need to analyze the factors that influence dribbling skills.

Empirically, there is a gap between expectations and reality in the dribbling abilities of PKO students. The hope is that students are able to master basic basketball techniques perfectly, but in reality there is still significant variation in ability. The running speed significantly influences dribbling quality (Fatahillah, 2018; Setyo et al., 2020; Ramirez-Campillo et al., 2021), a comprehensive identification remains elusive.

It is crucial to conduct this research to uncover the connection between running speed and basketball dribbling ability. We can develop a more targeted training strategy to enhance students' skills by identifying this correlation. In addition, this research can provide theoretical and practical contributions to the development of basketball training methods in universities.

Based on the complexity of the problem and the potential for scientific contribution, the research on "basketball dribbling ability reviewed from the running speed of students" is very significant. We anticipate this research will offer a fresh viewpoint on the connection between physical fitness and basketball technical skills and generate useful suggestions for coaches and sports trainers.

## 2. METHOD

This study uses a quantitative approach with a correlational method to identify the relationship between running speed and basketball dribbling ability among PKO UPRI Makassar students. The independent variable is running speed. The dependent variable is basketball dribbling ability. The population consists of students from Sports Coaching Education at UPRI. The study employs a quota sampling technique, utilizing 22 students as participants. Research Instruments as follows:

- a. We conduct a running speed test using tools such as a stopwatch, cone, and meter, followed by a 30-meter running test. We give the best time two chances.
- b. The Dribbling Ability Test uses a basketball, a cone, and a field. Participants dribble according to a 15-meter route. Assessment using technical rubric.

Data analysis techniques utilize descriptive analysis to calculate the average and standard deviation. Inferential Analysis Normality Test: Kolmogorov-Smirnova. Correlation Test: Pearson Product Moment. Significance Test: Using SPSS version 25.

### 3. RESULTS AND DISCUSSION

#### Results

This study aims to analyze the effect of 30-meter running ability on the basketball dribbling ability of students in the sports coaching education study program at UPRI Makassar. The following is the result of the descriptive analysis of 30-meter running speed in Table 1.

**Table 1.** Descriptive Analysis of 30 Meter Running Speed

Variable	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation
30 Meter Running Speed	22	0.7	4.1	4.8	98.2	4.464	.2060

Table 1 above illustrates the speed of running 30 meters for a sample of 22 students, with a range value of 0.7 and a minimum value of 4.1 seconds. Maximum Value: 4.8 seconds. Sum Value 98.2, Mean Value 4.46, and Standard Deviation Value 0.2060. Next, Table 2 presents the results of the Descriptive Analysis of Dribbling Ability.

**Table 2.** Descriptive Analysis of Dribbling Ability

Variable	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation
Dribbling Ability	22	5.3	9.4	14.7	265.2	12.055	1.5111

Table 2 shows that the dribbling ability with a sample size of 22 students has a range value of 5.3 and a minimum value of 9.4 seconds. Maximum value: 14.7 seconds. The total value is 265.2, the average is 12.055, and the standard deviation is 1.5111. Table 3 presents the analysis of the normality test for the 30-Meter Running Speed Data and Dribbling Ability of PKO UPRI Makassar students.

**Table 3.** Normality Test

Variable	Kolmogorov-Smirnov <sup>a</sup>			
	Statistic	df	Sig.	Information
30 Meter Running Speed	.133	22	.200*	Normal
Dribbling Ability	.121	22	.200*	Normal

Table 3 above demonstrates the results of the Kolmogorov-Smirnov Normality Test.

1. We obtained a statistical value of 0.133 and a significance value of 0.200 for the 30-meter running speed data from 22 samples. Based on the significance value of 0.200 (Sig = 0.05), we can conclude that the 30-meter running speed data follows a normal distribution.
2. We obtained a statistical value of 0.121 and a significance value of 0.200 for the Dribbling Ability data from 22 samples. Based on the significance value of 0.200

(Sig = 0.05), we can conclude that the dribbling ability data follows a normal distribution.

**Table 4.** Linearity Test Results

Variable	Defiation from Linearity (F)	Sig	Information
X with Y	1.620	0.214	Linear

Table 4 above demonstrates that the linearity test of the 30-meter running speed variable with the basketball dribbling ability variable yielded a linearity value of 0.214. We can conclude that there is a linear relationship between the 30-meter running speed and the basketball dribbling ability because the linearity value of the data is greater than 0.05 ( $0.214 > 0.05$ ). Table 5 below presents the results of the hypothesis testing.

**Table 5.** Hypothesis Testing

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.117 <sup>a</sup>	.014	-.036	1.5379

a. Predictors: (Constant), 30 Meter Running Speed

Table 5 displays the results of a regression analysis examining the impact of 30-meter running speed on the basketball dribbling skills of PKO UPRI Makassar students. The obtained R-squared value of 0.014 indicates that the impact of 30-meter running speed on basketball dribbling ability was not significant. The following is the output coefficients data for 30-meter running speed on basketball dribbling ability students in Table 6.

**Table 6.** Output Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.229	7.280		1.130	.272
	30 Meter Running Speed	.857	1.629	.117	.526	.605

a. Dependent Variable: Dribbling Ability

The constant number of unstandardized coefficients in Table 6 shows that the value is 8.229. This number is constant, meaning that in the absence of a 30-meter running speed, the consistent value of dribbling ability remains at 8.229.

The regression coefficient number of 0.857 in Table 6 means that for every 1% increase in 30-meter running ability, the basketball dribbling ability will increase by 0.857. The positive value (+) indicates a positive impact of the 30-meter running ability. The significant value of 0.605, surpassing 0.05, suggests that the 30-meter running ability has no influence on the basketball dribbling ability of students.

## Discussion

The results of the analysis showed that there was no significant effect between the 30-meter sprint ability and the basketball dribbling ability of students of the Sports Coaching Education Study Program UPRI Makassar. This finding contradicts several previous studies that stated a close relationship between running speed and dribbling skills in basketball. A study by [Nurhasan et al. \(2020\)](#) on 50 high school basketball players found a strong positive correlation between 30-meter sprint ability and basketball dribbling ability. Players with better running speed tend to have better ball control when dribbling. Running speed is one of the important physical components that supports the effectiveness of player movement in basketball ([Pino-Ortega et al., 2021](#); [Papla et al., 2022](#)).

Furthermore, research by [Hidayat et al. \(2021\)](#) on 40 college basketball players also confirmed a significant relationship between 30-meter sprint speed and dribbling skills. Players with faster running times showed better dribbling performance in skills tests. Running speed is a strong predictor of basketball dribbling ability.

However, the results of this study revealed different outcomes. There was no significant effect between 30-meter running ability and basketball dribbling ability among students. This indicates that running speed is not always the main determining factor in basketball dribbling skills. This finding could suggest that not only running speed factors but also other motor skill components like coordination, agility, and ball control influence dribbling ability ([Hassan et al., 2022](#); [Feng et al., 2024](#)). Basketball players with poor running speed, but supported by excellent coordination and agility skills, can still demonstrate satisfactory dribbling performance.

Research by [Rifai et al. \(2022\)](#) on 30 high school basketball players found that agility ability contributed more to dribbling skills than speed of running. Players who are agile and quick in changing the direction of body movement while dribbling tend to have better ball control ([Te Wierike et al., 2018](#)). In addition, [Setyawan et al. \(2021\)](#), in their study on 25 college basketball players, emphasized the importance of eye-hand coordination in supporting dribbling ability. Players with excellent coordination can effectively integrate eye and hand movements when controlling the ball, so they are able to dribble better ([Robalo et al., 2021](#)).

The characteristics of the sample, which consists of PKO UPRI Makassar students, may also influence the findings in this study. PKO students certainly have different backgrounds and levels of ability in basketball compared to professional players or basketball athletes. Furthermore, PKO UPRI Makassar students may undergo a different training and coaching process compared to basketball players at a higher level. This difference can affect the pattern of dribbling skill development between the two groups.

Research by [Adi et al. \(2021\)](#) on students University also found similar results, where there was no significant relationship between 30-meter running speed and basketball dribbling ability. This finding further strengthens the hypothesis that in the PKO student

population, running speed is not the main predictor of basketball dribbling ability (Scanlan et al., 2014; Stojanović et al., 2019; Čaušević et al., 2023). However, to confirm these findings, we need to conduct further research with a wider sample and a more comprehensive design. We also need to explore other factors in depth, like specific training, playing experience, and anthropometric characteristics, in relation to basketball dribbling skills.

#### 4. CONCLUSION

The conclusion of this study shows that there is no significant effect between 30-meter running ability and basketball dribbling ability among PKO UPRI Makassar students. The data analysis results reveal an R-squared value of 0.014, indicating no significant relationship between 30-meter running speed and basketball dribbling ability. Additionally, the basketball dribbling ability of students remains unaffected by a significant value of 0.605, which is greater than 0.05. This result is different from several previous studies and indicates that running speed is not the only determining factor in dribbling skills in the student population.

We suggest that coaches and basketball coaching programs can take these findings into consideration when designing training programs that are more comprehensive and responsive to the needs of athletes.

#### REFERENCES

- Aarts, D., Barendrecht, M., Kemler, E., & Gouttebauge, V. (2021). The prevention of injuries among youth basketballers according to the "Sequence of Prevention": a systematic review. *South African Journal of Sports Medicine*, 33(1), 1-12.
- Adi, S., Rahayu, T., & Kusuma, I. J. (2021). Hubungan Antara Kecepatan Lari 30 Meter dengan Kemampuan Dribbling Bola Basket Mahasiswa. *Jurnal Pendidikan Jasmani dan Olahraga*, 6(1), 18-24.
- Arias-Estero, J. L. (2013). Opportunities for and success in dribbling, passing, receiving, and shooting in youth basketball. *International Journal of Sports Science & Coaching*, 8(4), 703-711.
- Bogdanis, G. C., Ziagos, V., Anastasiadis, M., & Maridaki, M. (2007). Effects of two different short-term training programs on the physical and technical abilities of adolescent basketball players. *Journal of Science and Medicine in Sport*, 10(2), 79-88.
- Čaušević, D., Čović, N., Abazović, E., Rani, B., Manolache, G. M., Ciocan, C. V., ... & Alexe, D. I. (2023). Predictors of speed and agility in youth male basketball players. *Applied Sciences*, 13(13), 7796.
- Gou, Q., & Li, S. (2023). Study on the correlation between basketball players' multiple-object tracking ability and sports decision-making. *Plos one*, 18(4), e0283965.
- Fatahillah, A. (2018). Hubungan kelincahan dengan kemampuan dribbling pada siswa ekstrakurikuler bola basket. *Gelanggang Olahraga: Jurnal Pendidikan Jasmani Dan Olahraga*, 1(2), 11-20.
- Firmansyah, M., Syafaruddin, S., & Victorian, A. R. (2017). Kelincahan Dan Kecepatan Lari 30 Meter Dengan Kemampuan Dribble Ekstrakurikuler Bola Basket Di SMP. *Altius: Jurnal Ilmu Olahraga dan Kesehatan*, 6(2).
- Feng, W., Wang, F., Han, Y., & Li, G. (2024). The effect of 12-week core strength training

- on dynamic balance, agility, and dribbling skill in adolescent basketball players. *Heliyon*, 10(6).
- Hassan, A. K., Alhumaid, M. M., & Hamad, B. E. (2022). The effect of using reactive agility exercises with the FITLIGHT training system on the speed of visual reaction time and dribbling skill of basketball players. *Sports*, 10(11), 176.
- Hidayat, R., Nurhasan, N., & Sudiana, I. K. (2021). Kontribusi Kecepatan Lari 30 Meter Terhadap Keterampilan Dribbling Bola Basket. *Jurnal Keolahragaan*, 9(1), 11-19.
- Iserbyt, P., Dehandschutter, T., Leysen, H., & Looockx, J. (2023). Coaching and Physical Activity with Higher and Lower Skilled Student-Coaches in A Basketball Sport Education Season: A Pilot Study. *International Journal of Kinesiology in Higher Education*, 7(4), 296-308.
- Ivanović, J., Kukić, F., Greco, G., Koropanovski, N., Jakovljević, S., & Dopsaj, M. (2022). Specific physical ability prediction in youth basketball players according to playing position. *International Journal of Environmental Research and Public Health*, 19(2), 977.
- Nurhasan, N., Hidayat, R., & Sudiana, I. K. (2020). Hubungan Kecepatan Lari 30 Meter dengan Keterampilan Dribbling Bola Basket. *Jurnal Keolahragaan*, 8(2), 121-128.
- Nurparisi, M. L., Kurniawati, A., Arifin, Z., & Permadi, A. A. (2024). Influence of Ballhandling Techniques on the Ball Mastery Skills of Students in Basketball Games at SMA Negeri 17 Garut. *Musamus Journal of Physical Education and Sport (MJ PES)*, 6(4), 540-555.
- Papla, M., Perenc, D., Zajac, A., Maszczyk, A., & Krzysztolik, M. (2022). Contribution of strength, speed and power characteristics to change of direction performance in male basketball players. *Applied Sciences*, 12(17), 8484.
- Pino-Ortega, J., Rojas-Valverde, D., Gómez-Carmona, C. D., & Rico-González, M. (2021). Training design, performance analysis, and talent identification—A systematic review about the most relevant variables through the principal component analysis in Soccer, Basketball, and Rugby. *International Journal of Environmental Research and Public Health*, 18(5), 2642.
- Portaz, M., Cabestrero, R., Quirós, P., & Santos, O. C. (2024). AI-Powered Psychomotor Learning Through Basketball Practice: Opportunities and Challenges. *Mind, Body, and Digital Brains*, 193-215.
- Prasetyo, T., Sir, I., & Amir, A. (2022). The Effects of the Team-Game-Tournaments Learning Model on Primary School: Basic Dribble Moves in Basketball Games. *ETDC Indonesian Journal of Research and Educational Review*, 1(2), 225-233.
- Ramirez-Campillo, R., Gentil, P., Moran, J., Dalbo, V. J., & Scanlan, A. T. (2021). Dribble deficit enables measurement of dribbling speed independent of sprinting speed in collegiate, male, basketball players. *The Journal of Strength & Conditioning Research*, 35(7), 2040-2045.
- Rifai, A., Gani, R. A., & Hardiyono, B. (2022). Kontribusi Kelincahan dan Kecepatan Lari Terhadap Keterampilan Dribbling Bola Basket. *Jurnal Kesehatan Olahraga*, 10(1), 45-52.
- Robalo, R. A., Diniz, A. M., Fernandes, O., & Passos, P. J. (2021). The role of variability in the control of the basketball dribble under different perceptual setups. *European journal of sport science*, 21(4), 521-530.
- Setiawan, D., Kurniawan, A., & Mahardika, I. (2021). Strategi Peningkatan Keterampilan Bola Basket pada Mahasiswa. *Jurnal Pendidikan Jasmani*, 11(2), 76-90.
- Setyo, E. B., Hartono, M., & Rustiadi, T. (2020). Influence of Training Method and Running Speed Toward Ball Dribbling Skill Improvement of Soccer Extracurricular Students of The Whole 02 Cluster of JHS Students in Semarang. *Journal of Physical Education*

- and Sports*, 9(1), 1-7.
- Scanlan, A., Humphries, B., Tucker, P. S., & Dalbo, V. (2014). The influence of physical and cognitive factors on reactive agility performance in men basketball players. *Journal of sports sciences*, 32(4), 367-374.
- Sofyan, D., Abdullah, K. H., & Gazali, N. (2022). A bibliometric review of basketball game: Publication trends over the past five decades. *ASM Science Journal*, 17, 1-12.
- Song, X., & Fan, L. (2022). Pattern recognition characteristics and neural mechanism of basketball players' dribbling tactics based on artificial intelligence and deep learning. *Mathematical Problems in Engineering*, 2022(1), 1673969.
- Stojanović, E., Aksović, N., Stojiljković, N., Stanković, R., Scanlan, A. T., & Milanović, Z. (2019). Reliability, usefulness, and factorial validity of change-of-direction speed tests in adolescent basketball players. *The journal of strength & conditioning research*, 33(11), 3162-3173.
- Te Wierike, S. C. M., Huijgen, B. C. H., Jonker, L., Elferink-Gemser, M. T., & Visscher, C. (2018). The importance and development of ball control and (self-reported) self-regulatory skills in basketball players for different positions. *Journal of sports sciences*, 36(6), 710-716.
- Vencúrik, T., Nykodým, J., Bokůvka, D., Rupčić, T., Knjaz, D., Dukarić, V., & Struhár, I. (2021). Determinants of dribbling and passing skills in competitive games of women's basketball. *International journal of environmental research and public health*, 18(3), 1165.
- Wang, P., Shi, C., Chen, J., Gao, X., Wang, Z., Fan, Y., & Mao, Y. (2024). Training methods and evaluation of basketball players' agility quality: A systematic review. *Heliyon*.
- Yilmaz, G. (2014). The effects of power, speed, skill and anaerobic capacity of different training models in young male basketball players. *The Anthropologist*, 18(3), 877-883.
- Zhou, M. Y. (2022). Sport psychology in coaching: Improving the personality traits and thinking skills of basketball players. *Thinking Skills and Creativity*, 46, 101115.