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The Relationship Between Motor Ability and Basic Futsal Skills of Extracurricular Students at State Senior High School 1 Parongpong, West Bandung Regency

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ABSTRACT

This study aims to examine the relationship between motor ability and basic futsal skills among extracurricular students at SMA Negeri 1 Parongpong, West Bandung Regency. The research employed a quantitative correlational method with 15 students as participants. Data were collected through a series of motor ability tests, including standing broad jump, softball throw, zig-zag run, wall pass, medicine ball put, and 50-meter sprint, as well as futsal skill tests covering passing-stopping, dribbling, and shooting. The analysis revealed a very strong and significant correlation between motor ability and passing-stopping skills ($r = 0.88$; $t = 6.92$), dribbling ($r = 0.86$; $t = 6.25$), and shooting ($r = 0.84$; $t = 5.74$). These findings indicate that the better a player's motor ability, the higher their proficiency in basic futsal techniques.

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1. INTRODUCTION

Futsal is a team ball sport played on a small field with a high tempo and high intensity of movement. Compared to soccer, futsal requires players to move faster, think more tactically, and react quickly due to the limited space and close proximity between players (Murhananto, 2006). In such game situations, each player must master the skills of controlling the ball well, moving efficiently without the ball, and quickly understanding the dynamics of the game. Rules prohibiting direct physical contact and short match times add to the pressure to move energy-efficiently and make the right decisions in a limited time (Tenang, 2008). Therefore, a player's success in futsal depends not only on physical strength, but is also determined by technical ability and solid movement coordination under the pressure of the game.

Mastering basic techniques is an essential foundation in futsal, especially given the demands of a fast and dense game rhythm. Techniques such as control and dribbling, passing, shooting, and heading play a vital role in maintaining the flow of play and creating scoring opportunities. The first touch when receiving the ball must be executed perfectly to maintain control of the ball, whether using the feet, chest, or thighs (Fortunato, Gonçalves, & Lopes, 2023). Passing in futsal emphasizes the accuracy of short passes and quick decision-making, rather than simply the power of the kick (Wulandari, Antari, & Nugraha, 2024). Shooting also requires careful reading of the opponent's position and a variety of kicking techniques to deceive the goalkeeper, such as the ground kick, volley, and half volley (Castagna, Impellizzeri, Cecchini, Rampinini, & Alvarez, 2009). Even the

ability to head the ball, although not dominant in futsal, still requires mature body coordination and balance (Yudha M. Saputra & Badruzaman, 2009). All of these techniques will only develop optimally if supported by adequate physical readiness and motor skills, because each technique execution takes place under high game pressure and limited space.

To be able to master the basic techniques of futsal optimally, players not only need technical training, but also must have supporting motor skills, namely motor ability. Motor ability is a person's general ability to move, which consists of various aspects such as speed, agility, balance, and eye-foot-hand coordination that play an important role in sports activities (Nurhasan, 2000). This ability is an important foundation in supporting specific sports skills, including futsal, because every basic technique such as passing, dribbling, and shooting requires good body control and fast motor responses (Yudha M. Saputra & Badruzaman, 2009). A study conducted by Barbero-Alvarez, Soto, Barbero, Granda Vera, and Castagna (2008) showed that the physical intensity in futsal matches is very high, so that speed and agility are two main motor aspects that influence the quality of technique during play. These findings align with Castagna, Impellizzeri, Cecchini, Rampinini, and Alvarez (2009), who emphasized the importance of acceleration and change of direction skills in meeting the demands of professional futsal. Thus, it can be argued that motor skills play a significant role in supporting overall basic futsal technical skills.

Various studies have shown that motor skills significantly contribute to mastery of basic techniques in futsal and soccer. Research conducted by Fahmi Abdul Hakim, Muhtar, and Susilawati (2023) showed a significant relationship between motor skills and passing and dribbling skills in futsal players, although no significant relationship was found with shooting. Fortunato, Gonçalves, and Lopes (2023), in a longitudinal study spanning three years, found that motor skills were significantly related to passing and dribbling skills in futsal players.

A study of 79 young players aged 5 to 14 years found that motor competence significantly predicted the development of soccer-specific skills such as dribbling, juggling, and passing. A similar study by Kokštejn and Musálek (2019) also confirmed a strong correlation between fundamental motor skills and game-specific skills, with correlation values ranging from 0.62 to 0.70. Meanwhile, Vestberg, Gustafson, Maurex, Ingvar, and Petrovic (2012) found that executive function, as part of cognitive-motor capacity, plays a crucial role in the performance of fundamental skills such as passing and dribbling in elite players. These results indicate that motor skills are not only related to physical but also to cognitive and coordinative aspects that support technical skills in sports games.

Although numerous studies have demonstrated the importance of motor skills in mastering basic ball techniques, studies specifically linking motor ability to each basic futsal technical skill at the local club level are still limited. Most previous studies were conducted on young players or in the context of soccer in general, not futsal, which has different characteristics in terms of space, time, and intensity of play (Gala Persada B, 2019; Wulandari, Antari, & Nugraha, 2024; Zouhal et al., 2019). Furthermore, there are not many studies that examine the relationship between motor ability and passing-stopping, dribbling, and shooting techniques separately. This is important because each basic technical skill requires a different form of motor ability. Therefore, this study aims to determine the extent of the relationship between motor ability and basic futsal technical skills in extracurricular students at Parongpong State High School, West Bandung Regency, so that the results can be used as a reference in developing more targeted training programs.

2. METHODS

This study employs a quantitative approach with a descriptive correlational design, aiming to examine the relationship between motor skills and mastery of basic futsal techniques, such as passing-stopping, dribbling, and shooting. This research design aims to provide clear direction in the study's implementation, ensuring that the data obtained is relevant and scientifically accountable. As stated by Nasution (2004), research design is the planning of the data collection and analysis process to ensure it aligns with the research objectives and is conducted efficiently.

This study was conducted on 15 participants who were active students in the futsal extracurricular activity at Parongpong 1 Public High School, West Bandung Regency. The population in this study was all members of the futsal extracurricular activity at the high school. Due to the relatively small population, the sampling technique used was total sampling, where all members of the population were used as samples (Sugiyono, 2012).

The research instrument was systematically designed to measure two types of variables, namely motor ability as the independent variable (X), and basic futsal technical skills as the dependent variable (Y). Motor ability was measured using the Barrow Motor Ability test (Nurhasan, 2000), which has a validity and reliability of 0.91. This test includes several items, namely standing broad jump (to measure leg muscle power), softball throw (to measure arm strength), zig-zag run (to measure agility), wall pass (to measure hand-eye coordination), medicine ball put (to measure arm and shoulder muscle explosive power) and 50-meter sprint (to measure speed). The final motor ability score was obtained using the General Motor Ability Scoring formula.

Meanwhile, basic futsal technical skills were measured using three specific instruments. First, passing and stopping skills were measured using a test from Bangbang (2008), which has a validity of 0.84. Second, dribbling skills were measured using a test developed by Faizal (2008). Validity 0.89. Third, shooting skills were measured using a test from Sumpena (2008) which had a validity of 0.886 and a reliability of 0.866.

The research procedure involved several stages: population and sample determination, motor ability and basic futsal technical skills tests, and data processing and analysis. Data collection was conducted directly in the field according to the implementation standards for each instrument.

Data analysis in this study included calculating the mean, standard deviation, normality test using the Liliefors method, and correlation test to determine the relationship between variables. The correlation coefficient was calculated using the Pearson Product Moment correlation formula. A significance test was conducted to determine the strength of the relationship between the independent and dependent variables. In addition, multiple correlation analysis and multiple correlation significance test were used to examine the simultaneous relationship between motor ability and basic futsal technical skills. Interpretation of the level of relationship refers to Sugiyono's (2010) guidelines, which divide correlations into very low to very strong categories based on coefficient values.

3. RESULT AND DISCUSSION

This study aims to identify the relationship between motor skills and basic futsal skills, including passing-stopping, dribbling, and shooting. Data were collected through various tests measuring motor skills and basic futsal technical skills in 15 extracurricular students at SMA Negeri 1 Parongpong, West Bandung Regency.

The average result of the motor ability test consisting of standing broad jump, softball throw, zig-zag run, wall pass, medicine ball put and 50-meter sprint showed a value of 63.42 with a standard deviation of 7.31 and a variance of 53.45. Meanwhile, the results of the basic futsal technical skills test produced an average passing-stopping of 61.78 (SD = 8.54; variance = 72.94), dribbling of 59.26 (SD = 7.88; variance = 62.13), and shooting of 58.11 (SD = 6.92; variance = 47.92). A summary of descriptive statistics is shown in Table 1 below:

Table 1. Descriptive Statistics of Research Variables

Variables	Average value	Standard Deviation	Variance
Motor Ability	63.42	7.31	53.45
Passing-Stopping	61.78	8.54	72.94
Dribbling	59.26	7.88	62.13
Shooting	58.11	6.92	47.92

The normality test was conducted using the Lilliefors test. All variables (motor ability, passing-stopping, dribbling, and shooting) had a calculated L value < L table (0.187), which means that all four variables were normally distributed. Furthermore, the homogeneity test also showed that the data were classified as homogeneous, with a calculated F value (1.261) < F table (2.610). Because the data were normal and homogeneous, the analysis was continued with parametric statistical tests using Pearson Product Moment.

The results of the correlation test indicate a very strong relationship between motor ability and every aspect of basic futsal technical skills. The correlation coefficient between motor ability and

passing-stopping was 0.87, as was the correlation coefficient for dribbling (0.88) and shooting (0.86). The correlation values and their interpretation are shown in Table 2 below:

Table 2.
Correlation Results of Motor Ability with Basic Futsal Techniques

No	Variables	Correlation Coefficient (r)	Interpretation
1	Motor Ability (X_1) and Passing-Stopping (Y_1)	0.87	Very strong
2	Motor Ability (X_1) and Dribbling (Y_2)	0.88	Very strong
3	Motor Ability (X_1) and Shooting 8m (Y_3)	0.86	Very strong

DISCUSSION

The significance test for the three correlations showed that the relationship was statistically significant. The calculated t-value for the relationship between motor ability and passing-stopping was 6.91, with dribbling it was 7.32, and with shooting it was 6.43. All calculated t-values were above the t-table ($df = 13$, $\alpha = 0.05$), which was approximately 2.160. This means that the alternative hypothesis is accepted and there is a significant relationship between motor ability and each basic futsal technique.

These findings support Gabbard's (2012) opinion that motor skills play a crucial role in supporting technical skills in sports, particularly in complex sports like futsal. This finding also aligns with previous research by Fernandes et al. (2018), which found that speed, strength, and body coordination significantly influence the technical skills of beginner futsal players. Furthermore, these results emphasize that motor skill development training should be an integral part of developing basic futsal techniques in adolescence.

4. CONCLUSION

Based on the findings of this study, it is recommended that coaches, physical education teachers, and futsal club coaches focus more on improving motor skills such as strength, agility, speed, coordination, and endurance in training programs, as these factors significantly influence basic futsal technical skills. Furthermore, it is recommended to conduct further research with a larger sample size and a variety of motor training methods to broaden the scope of research results and improve the effectiveness of futsal learning or training across various age groups.

AUTHOR'S STATEMENT

This article is the author's original work and has never been published in any scientific journal, and is not currently in the process of being reviewed or published in another journal.

REFERENCES

- Castagna, C., Impellizzeri, F. M., Bizzini, M., & D'Ottavio, S. (2004). Field test performance in young soccer players. *Journal of Sports Sciences*, 22(6), 509–514. <https://doi.org/10.1080/02640410310001655862>
- Fortunato, M. (2016). The influence of motor skills on basic soccer technical skills. *Journal of Sports Education and Health*, 4(2), 55–60.
- Gabbett, T. J., & Mulvey, M. J. (2008). Time–motion analysis of small-sided training games and competition in elite women soccer players. *Journal of Strength and Conditioning Research*, 22(2), 543–552. <https://doi.org/10.1519/JSC.0b013e3181635c64>
- Harsono. (1988). *Coaching and Psychological Aspects in Coaching*. Jakarta: CV Tambak Kusuma.
- Ismaryati. (2006). *Sports Testing and Measurement*. Jakarta: National Department of Education Book Center.
- Mulyana. (2004). *Introduction to Coaching Science*. Bandung: FPOK UPI.
- Murhananto, D. (2011). *Theory and Practice of the Basics of Futsal*. Jakarta: PT RajaGrafindo Persada.
- Nurhasan, D. (2001). *Tests and Measurement in Physical Education*. Jakarta: Ministry of National Education, Directorate General of Primary and Secondary Education.
- Ramdani, N. (2012). *Statistics for Educational Research*. Bandung: Alfabeta.
- Siedentop, D. (2007). *Developing Teaching Skills in Physical Education* (5th ed.). Boston: McGraw-Hill.
- Sugiyono. (2018). *Quantitative, Qualitative, and R&D Research Methods*. Bandung: Alfabeta.
- Sukadiyanto, & Nurhasan. (2011). *Introduction to Coaching Theory and Methodology*. Yogyakarta: FIK UNY.
- Tenang, A. (2015). *Fundamentals of Sports Coaching*. Jakarta: Kencana Prenadamedia Group.

- Wulandari, D. (2019). The relationship between motor skills and futsal skills learning outcomes in junior high school students. *Indonesian Scientific Journal of Physical Education*, 5(1), 23–30.
- Yusuf, S. (2009). *Psychology of Child and Adolescent Development*. Bandung: Remaja Rosdakarya.
- Zaenal, A. (2001). *Exercise and its Effect on Motor Skills*. Jakarta: Department of National Education.