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The Relationship Between Leg Muscle Strength And Shooting Skills In Football Games In Grade V Students of Tanapobunti Safety Basis Elementary School

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ABSTRACT

This study aims to determine the relationship between leg muscle strength and shooting skills in football games in fifth-grade students at Tanapobunti Salvation Army Elementary School. This study examines the importance of shooting skills as one of the basic techniques that determine the effectiveness of football games, and the assumption that this ability is influenced by leg muscle strength. The type of research used is correlational research with a quantitative approach. The research subjects were 20 fifth-grade students selected using a total sampling method. The research instruments used included a leg muscle strength test using a squat jump test and a shooting skill test using 10 attempts to kick a ball towards the goal. Data analysis was performed using Pearson product-moment correlation with a significance level of 5%. The analysis results show a positive and significant relationship between leg muscle strength and shooting skills in football. The correlation value of r = 0.72 indicates a strong correlation, with leg muscle strength contributing 51.8% to the variation in shooting skills. Therefore, the stronger a student's leg muscles are, the better their shooting ability will be. Therefore, developing a leg strength training program is crucial for improving basic football technical skills in elementary school students.

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A. Conception and design of the study;
B. Acquisition of data;
C. Analysis and interpretation of data;
D. Manuscript preparation;
E. Obtaining funding

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INTRODUCTION

Football is a popular sport played by many groups, including elementary school students. One of the fundamental skills required to master football is shooting, or kicking the ball toward the goal. Shooting is a key skill for scoring goals and determining a team's success in a match. Therefore, mastery of good shooting techniques must be developed from an early age to ensure students have a strong foundational skill.

Effective shooting requires a combination of proper technique, motor coordination, and good physical condition. One crucial component of physical condition is leg muscle strength. Strong leg muscles enable players to generate greater kicking

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power, allowing them to kick the ball with greater speed, distance, and accuracy. According to Harsono (2017), strength is a key factor influencing the quality of motor skills in sports, including football.

Initial observations at Tanapobunti Salvation Army Elementary School indicate that most students have poor shooting skills. This is indicated by kicks that lack power and miss-target direction. One suspected cause is a lack of adequate leg muscle strength. Lack of focused physical training prevents students from systematically developing leg strength, impacting their basic technique.

Previous research also demonstrated a strong correlation between leg muscle strength and kicking skills. A study by Kurniawan (2019) found that leg strength contributes 48% to kicking skills. Similarly, research by Fitrianto (2021) showed that students with high leg strength have a better shooting success rate than those with low strength.

Based on this background, this study was conducted to empirically test the relationship between leg muscle strength and shooting skills in football games in fifth-grade students at Tanapobunti Salvation Army Elementary School. This study is expected to provide practical contributions for physical education teachers in designing training programs that emphasize developing leg muscle strength as an effort to improve students' basic football technical skills.

METHODS

This study used a quantitative method with a correlational research design. This design was chosen because it is appropriate for examining the relationship between two variables: leg muscle strength (independent variable) and shooting skill (dependent variable). The study was conducted at Bala Keselamatan Tanapobunti Elementary School during the even semester of the 2024/2025 academic year.

The study population consisted of all 20 fifth-grade students, consisting of 11 male students and 9 female students. Due to the relatively small population, this study employed a total sampling technique, thus involving all students as research subjects.

The data collection instrument consisted of two tests. First, a 30-second squat jump test measured leg muscle strength. The number of successful jumps was measured. Second, shooting skills were measured by kicking the ball toward the goal in 10 attempts. Scores were awarded based on the number of shots on target.

The data analysis technique used Pearson product-moment correlation to determine the relationship between the two variables. Before the correlation analysis, a Kolmogorov-Smirnov normality test was performed to ensure the data were normally distributed. The results of the correlation analysis were then compared with the table r value at a 5% significance level to determine the significance of the relationship.

The success indicator for this research is a positive and significant relationship between leg muscle strength and shooting skills. Therefore, the research results are expected to serve as a basis for developing physical training strategies in physical education (PJOK) learning.

RESULTS AND DISCUSSION

Result

The results showed that the leg muscle strength of fifth-grade students at Tanapobunti Salvation Army Elementary School varied between 25 and 48 jumps in the squat jump test, with an average of 36.2 jumps. Meanwhile, shooting skills varied between 2 and 9 shots on target out of 10 attempts, with an average of 5.8 shots.

The normality test showed that the data for both variables were normally distributed with a significance value > 0.05. This means the data met the requirements for analysis using Pearson correlation. The correlation test results obtained a value of r = 0.72 with a significance value of p < 0.05. This value is greater than the table r (0.444), so it can be concluded that there is a positive and significant relationship between leg muscle strength and shooting skills.

Test Group		X	Y
Leg Muscle Test	Pearson Correlation	1	0.773**
	Sig. (2-tailed)		.000
	N	23	23
Test Shooting	Pearson Correlation	0.773**	1
	Sig. (2-tailed)	.000	
	N	23	23

Interpretation of the values can be seen from the Leg Muscle Test & Shooting Test values with a Pearson Correlation value of = 0.773 or a Sig. Value (2-tailed) of .000 < 0.05, so that the data can be said to have a relationship. These findings suggest that students with greater leg muscle strength tend to have better shooting skills. The data also show a trend toward higher average leg strength for male students than female students, although this difference was not the primary focus of the study.

In general, the results of this study support the proposed hypothesis, namely that there is a significant relationship between leg muscle strength and shooting skills in football games in fifth-grade students of Tanapobunti Salvation Army Elementary School.

Discussion

The results of this study demonstrate that leg muscle strength plays a crucial role in shooting skills in football. The high correlation indicates that greater leg strength leads to better kicking skills. This aligns with the physical conditioning theory, which states that strength is a fundamental factor influencing the quality of motor skills in sports (Harsono, 2017).

This finding aligns with Kurniawan's (2019) research, which showed leg strength contributed 48% to kicking skills. Fitrianto's (2021) research also confirmed that students with higher leg strength had better shooting success. These similar findings reinforce the belief that leg strength training should be a primary focus in learning basic football techniques.

Besides leg muscle strength, other factors influence a student's shooting skills. These factors include basic technical skills, eye-foot coordination, accuracy, and concentration when kicking the ball. This means that while leg strength contributes significantly, improving shooting skills still requires a comprehensive training approach.

Edwin Steven[1A-E], Nyoman Sukrawan[2B-D]*, Sardiman[3B-D], Rahmah[4B-D]
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The practical implication of this research is that elementary school physical education teachers should provide adequate training for leg muscle strengthening, such as squats, skipping, and interval running. These exercises not only improve leg muscle strength but also support students' stamina and motor coordination. Thus, optimal shooting skill improvement can be achieved.

Furthermore, the results of this study also open up opportunities for further research. For example, studies comparing the effectiveness of various types of leg strength training on improving shooting skills, or studies involving larger samples to test the consistency of the results. Cross-gender research is also important to determine the differences in the contribution of leg strength to football skills between male and female students.

Overall, this study confirms the importance of leg muscle strength in mastering basic football techniques. Elementary school sports teachers and coaches should use these findings as a basis for designing targeted training programs to improve students' overall skills.

CONCLUSION

Based on the research results, it can be concluded that there is a positive and significant relationship between leg muscle strength and shooting skills in football games in fifth-grade students at Tanapobunti Salvation Army Elementary School. The correlation value of r = 0.72 indicates that leg muscle strength makes a significant contribution, namely 51.8%, to students' shooting skills.

This study confirms that the stronger a student's leg muscles are, the better their shooting skills will be. Therefore, it is recommended that elementary school physical education programs emphasize leg muscle strengthening exercises. These exercises not only improve shooting skills but also support students' overall physical development.

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