



**Analysis of Leg Muscle Power on Shooting Ability in Students of the Futsal  
Extracurricular at State Junior High School 11 Banjarbaru**

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**Abstract**

This study aims to analyze the level of leg muscle power and shooting ability in futsal extracurricular students of state junior high school 11 Banjarbaru. This study uses a quantitative descriptive method with a total sampling technique, so that all 15 students who are members of the futsal extracurricular are used as samples. The instruments used were the standing broad jump test to measure leg muscle power and the goal shooting test to measure shooting ability, with each assessment category having been standardized. The results showed that the majority of students had leg muscle power in the medium category (53%), followed by the poor category (33%), and only 13% were in the good category. Meanwhile, shooting ability was also dominated by the medium category (73.33%), with 20% in the poor category and only 6.67% in the good category. Neither student achieved the excellent category for either variable. These findings indicate that students' leg muscle power and shooting ability still need to be improved through a more focused and structured training program. This research contributes to providing an empirical picture at the junior high school level and becomes the basis for the development of more effective physical exercises in futsal extracurricular in schools.

**How to Cite**

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## INTRODUCTION

Sport futsal it is a type of big ball game sport played by five people, including the goalkeeper and is usually played indoors or outdoors. This futsal sport is one of the most famous branches and is loved by all levels of society (Teza Prabowo et al., 2021). Futsal is a sport where the basic technique of playing futsal is almost the same as the technique of playing football, in the sport of futsal requires cohesiveness in playing to achieve victory like football (Arifin, Hasyim, et al., 2022). Futsal is a dynamic and strategic sport, where scoring goals is the decisive aspect of victory, accurate and planned shooting skills are a precise weapon to break into the opponent's goal (Aunilah et al., 2024). Futsal is one of the sports that is increasingly popular among students, especially at the junior high school level. One of the basic techniques that greatly determines the success of a futsal team is shooting, which is the ability to kick the ball with high power and accuracy towards the opponent's goal. The effectiveness of shooting is greatly influenced by the physical condition of the player, especially the power of the leg muscles, which play an important role in producing strong, fast, and accurate kicks.

Shooting is one of the important elements in futsal, because the field is certainly smaller than the football field, so players can do a lot of this technique to score goals (Maulana et al., 2024). Shooting is one of the individual abilities in the game of football with the aim of putting the ball into the goal (Utomo, 2017) shooting is one of the technical parts that must be mastered by every player to be able to play futsal with peak performance and achieve high achievements (Arma et al., 2024). Based on the above understanding, it can be concluded that shooting is one of the basic techniques that is very important in the game of futsal because it plays a major role in scoring goals and not only kicking the ball towards the goal, but also requires good mastery of techniques so that the kicks made are accurate and effective. Therefore, every futsal player must master shooting skills to achieve peak performance and high achievements in matches

The leg muscles are as a support for the body as well as to provide initial energy boost (Wanena, 2018) leg muscle strength is the tension exerted by the leg muscles against tension or load by making maximum efforts to move the muscle (Rosita et al., 2019). Muscle strength is defined as the force that can be generated by a muscle or a group of muscles in a maximum contraction as the driving force of each activity (Sepdanius,

2019). It can be concluded that the strength of the leg muscles has an important role as a support for the body while providing initial energy boost in various physical activities, especially in sports such as futsal.

Previous research has shown a significant relationship between leg muscle power and shooting ability in futsal. Nazzala (2016) it was found that leg muscle power had a correlation of 0.709 with the ability to shoot using the instep in futsal, in addition to coordination and balance factors that also had an effect. Other research by Rahmayanti et al., (2024) it is proven that leg muscle power training significantly improves shooting accuracy in high school futsal extracurricular players, with a 43% contribution to improving shooting ability. While there have been many studies highlighting the relationship between leg muscle power and shooting ability, most of those studies have been conducted in high school age groups or academy-level athletes, and there have not been many who have specifically researched futsal extracurricular students at the junior high school level, especially at state junior high school 11 banjarbaru. In fact, coaching basic techniques such as shooting at an early age is crucial to form the foundation of optimal futsal skills in the future.

The novelty of this study lies in its focus on the futsal extracurricular student state junior high school population of 11 banjarbaru, which has never been specifically studied before. In addition, this study also focuses on the analysis of leg muscle power as the main variable, with consider the context of extracurricular training and coaching in a junior high school setting. Thus, the results of this study are expected to provide a more relevant and applicable empirical picture for futsal coaches at the junior high school level.

Based on the results of observations on futsal extracurricular activities at state junior high school 11 banjarbaru, it was found that some students still had difficulty shooting to the maximum. Problems that are often encountered include weak kicks, inaccuracy, and lack of consistency in producing goals in match situations. This is suspected to be related to the lack of optimal leg muscle power possessed by students, as well as the lack of physical exercise programs focused on developing leg muscle power.

Based on the description above, this study aims to analyze the power of leg muscles on shooting ability in futsal extracurricular students of state junior high school 11 banjarbaru. This research is expected to contribute to the development of more effective training programs and

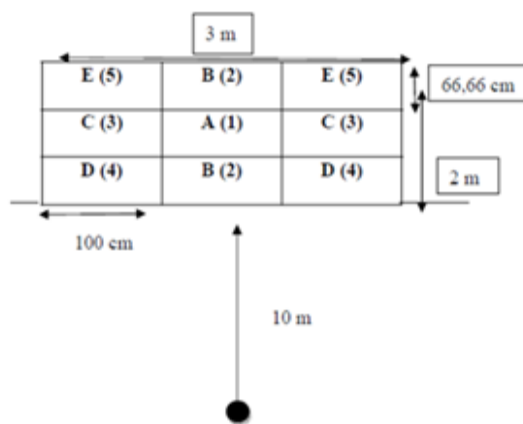
improve student achievement in futsal sports.

## METHODS

This study uses a descriptive research method with a quantitative approach (M. Khairin Fazri et al., 2024) (Fauzan et al., 2022). The descriptive approach was chosen because it aims to provide a clear and comprehensive picture of the level of leg muscle power and shooting ability of futsal players in the futsal extracurricular state junior high school of 11 Banjarbaru.

The population in this study is 15 futsal players who are registered as extracurriculars at state junior high school 11 Banjarbaru School. A sample is a part or representative of the population (Amirudin & Abdillah, 2020). Sampling was carried out using the Total sampling technique, which is the entire population that is used as the main sample (Arifin, Kahri, et al., 2022). Thus, the sample in this study is all or 15 futsal players in the extracurricular of state junior high school 11 Banjarbaru.

The instrument used in this study is a standing broad jump test to measure leg muscle power in futsal players in futsal stretches at state junior high school 11 Banjarbaru, the test is carried out three times and the highest score will be taken. Pictures to test the accuracy of the shooting:



**Figure 1.** Target shooting futsal

**Table 1.** Standing broad jump assessment norms

Category	value
Very Good	> 225
good	214 - 225
currently	203 - 213
less	171 - 202
Very little	<171

Source : Widiastuti (2018)

In addition, a futsal shooting ability test was also carried out to collect data on the shooting ability of futsal players in the extracurricular of state junior high school 11 Banjarbaru.

Shooting was carried out from the second penalty point with a distance of 10 m from the goal and the ball was kicked towards the target in the form of a futsal goal with a height of 2 m and a width of 3 m. It is then divided into 9 sections, and each section measures 66.66 cm high and 100 cm wide. Score 1 for goal (A), score 2 for goal (B), score 3 for goal (C), score 4 for goal (D), and score 5 for goal (E). If the kick hits the goal post and does not enter, it cannot be scored and must not be repeated. Each student made 10 shooting kicks.

**Table 2.** Shooting Ability Assessment Norms

Category	value
Very Good	40 - 50
good	30 - 39
currently	20 - 29
less	10 - 19
Very little	0 - 9

Source : Narlan (2017)

Data collection will be carried out at the state junior high school 11 Banjarbaru Sports School in futsal extracurriculars. by following standard procedures for each test. Before taking the test, players will be given an explanation of the purpose and procedure of the test, and given the opportunity to warm up. Then all research samples will conduct a standing broad jump test and Shooting. The collected data will be analyzed descriptively.

Descriptive analysis will be used to describe the characteristics of the sample of leg muscle power and shooting ability of the futsal players from junior high school 11 Banjarbaru. The formula used to determine the level of leg muscle power and shooting ability of the futsal players from state junior high school 11 Banjarbaru.

$$p = f/n \times 100\%$$

Explanation:

p = percentage amount

f = frequency of answers

n = total number of respondents.

## RESULTS AND DISCUSSION

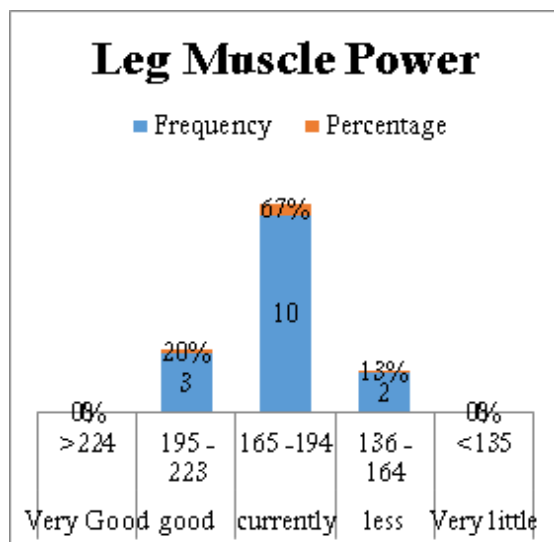
Based on research data for the leg muscle power score of state junior high school 11 Banjarbaru futsal players, the lowest score data was 173

and the highest was 217. From the data analysis, the mean value was 198 and the standard deviation (Standard Deviation) was 13.18. The frequency distribution of leg muscle blast powers is presented in the **Table 3** as follows:

**Table 3.** Frequency Distribution of Limb Muscle Power

Interval	Frequency	Percentage	Categories
> 225	0	0%	Very Good
214 - 225	2	13%	good
203 - 213	8	53%	currently
171 - 202	5	33%	less
<171	0	0%	Very little

Based on the **Table 3** results of the research of 15 students who were tested, there were no students who had very good category leg muscle power (0%), 2 students who had good category leg muscle power (13%), 8 students (53%) who had moderate category leg muscle power, 5 students (33%) who have lower limb muscle power in the insufficient category, and there are no students who have lower limb muscle power in the very insufficient category (0%). Hal tersebut lebih jelasnya bisa dilihat pada **Table 3** distribusi frekuensi power otot tungkai.



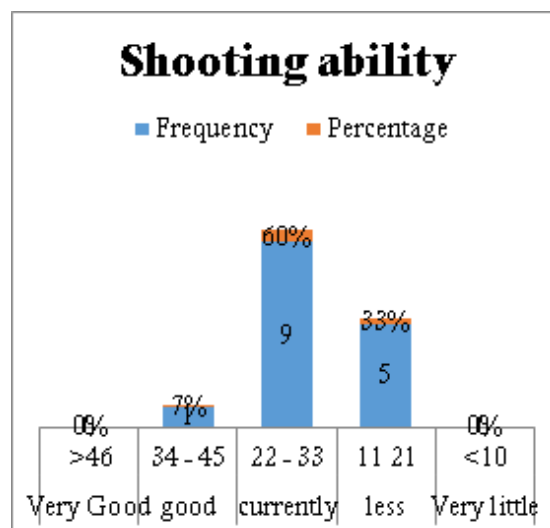
**Figure 2.** Power Muscle Diagram of the Leg

Based on the research data for the shooting skill scores of futsal players from state junior high school 11 Banjarbaru, the lowest score obtained was 17 and the highest was 34. From the data analysis, the average (Mean) score was 24.13 and the standard deviation (Standard Deviation) was 4.38. The frequency distribution of shooting skills is presented in the **Table 4** as follows:

**Table 4.** Frequency Distribution of Shooting Ability

Interval	Frequency	Percentage	Categories
40 - 50	0	0,00%	Very Good
30 - 39	1	6,67%	good
20 - 29	11	73,33%	currently
10 - 19	3	20,00%	less
0 - 9	0	0,00%	Very little

Based on the calculations above, it can be seen that there are no players who received the excellent category (0.00%), 1 player (6.67%) received the good category, 11 players (73.33%) fall into the medium shooting category, 3 players (20.00%) received the poor category, and there are no players who received the very poor category (0.00%).



**Figure 3.** Shooting Skill Diagram

The research results show that among 15 students of the futsal extracurricular at state junior high school 11 Banjarbaru, the majority (53%) are in the 'moderate' category for leg muscle power, 33% are in the 'poor' category, and only 13% fall into the 'good' category. No students achieved the category of 'very good' or 'very poor'. The average leg muscle power score of the students is 198 with a standard deviation of 13.18. The findings indicate that most students do not yet have optimal leg muscle power.. This condition is believed to be closely related to the training pattern that has not focused on the development of leg muscle explosiveness, as well as the limitations of facilities and training time in school extracurricular activities. This result is in line with the research. Nazzala (2016) which found that the muscle power of the legs of futsal students is



generally in the moderate to poor category, and the muscle power of the legs has a strong correlation with shooting ability. Research which found that the leg muscle power of futsal students is generally in the moderate to low category, and leg muscle power has a strong correlation with shooting ability. Research Rosita et al., (2019) also confirmed that the strength and power of the average students' leg muscles in futsal still need to be improved, especially in the junior high school age group. In addition, the research Rahmayanti et al., (2024) This proves that focused training on leg muscle power significantly improves shooting ability in high school futsal players, with a contribution of 43% to the increase in shooting ability. However, most previous studies were conducted on high school age groups or academic-level athletes, so this research expands the empirical evidence on junior high school age groups.

According to the research results, the shooting ability of the students is also dominated by the "medium" category (73.33%), with 20% in the "poor" category and only 6.67% reaching the "good" category. No students fell into the "very good" or "very poor" categories. The average shooting ability score is 24.13 with a standard deviation of 4.38. This finding shows that the majority of students do not yet have optimal shooting ability, whether in terms of strength, accuracy, or consistency in scoring goals. This condition is reinforced by field observations that show many students still struggle to perform shooting to the fullest.

Research Maulana et al., (2024). In the SSB U-18 age group, it was also found that the majority of players are in the moderate category for shooting ability, and only a small portion reaches the good category. Meanwhile, the research Teza Prabowo et al., (2021) At the U-19 futsal academy, it is shown that structured and focused training can increase the proportion of players in the good category to more than 30%. This emphasizes the importance of a systematic training program to enhance shooting skills from an early age. Research Saleh & Martiani, (2020) In junior high school students, it was also found that most students are in the medium category for shooting ability, and the strength of the leg muscles plays a significant role in improving that ability.

The novelty aspect of this research lies in the focus on the population, specifically the futsal extracurricular students of state junior high school 11 Banjarbaru. So far, similar studies have mostly been conducted on high school age groups or academy athletes, thus this research provides

a more relevant and applicable empirical picture for futsal coaches at the junior high school level. In addition, this research emphasizes the analysis of leg muscle power as a primary variable in the context of school extracurricular training. The results of this study highlight that the development of leg muscle power at the junior high school age is crucial for forming a solid foundation for optimal futsal skills in the future. This serves as an important input for schools and coaches to prioritize physical training focused on the development of leg muscle power, rather than just playing techniques.

This research contributes significantly to the development of sports science, particularly at the junior high school level. The results of this study emphasize that the majority of state junior high school 11 Banjarbaru's futsal extracurricular students are still in the moderate category for lower limb muscle power and shooting ability, highlighting the need for improvements in the physical training program that is more focused on developing lower limb muscle power. These findings expand the empirical evidence from previous studies that were generally conducted on high school age groups or academy athletes, and provide a real and relevant picture for futsal coaches at the junior high school level to design more effective and targeted coaching programs. Additionally, this study also adds to the literature on the importance of early physical training in forming a solid foundation for optimal futsal skills, and can serve as a reference for further research that seeks to examine other factors influencing shooting ability, such as coordination and psychological aspects.

However, this study has several limitations that need to be considered. The relatively small sample size, which consists of only 15 students, means that the results of this research cannot yet be generalized to a larger population. In addition, the descriptive research design only provides an overview of the conditions without directly testing the causal relationship between leg muscle power and shooting ability. This research also has not examined other factors that may influence, such as coordination, balance, and student motivation. Limitations of facilities and training time in the school environment can also affect measurement results and the effectiveness of the training program applied. Therefore, further research with a larger sample, experimental design, and a broader range of variables is necessary to strengthen the findings and provide more comprehensive recommendations for the development of futsal at the junior high school level.

## CONCLUSION

Based on the results of data analysis and discussion in this study, it can be concluded that the majority of students are in the moderate category for both variables, with 53% of students having moderate leg muscle power and 60% of students having moderate shooting ability, while the rest are mostly in the insufficient category. No students reached the very good or very poor category. This finding emphasizes that leg muscle power plays an important role in supporting shooting ability, and improving physical quality through special leg muscle power training is highly recommended to enhance students' shooting performance. This research also provides a tangible contribution to the development of extracurricular futsal training programs at the junior high school level with a more targeted and data-driven approach.

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