



Futsal Shooting Skill Level and Dominant Physical Condition in Extracurricular Activities of State Middle School 1 Batu Sopang, Kabupaten Paser, Kalimantan Timur

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Article History

Received May 2025

Accepted June 2025

Published Vol.14 No.(2) 2025

Keywords:

Futsal Shooting Skills;
Physical Condition;
Extracurricular.

Abstract

This study aims to determine the level of futsal shooting skills and dominant physical conditions of extracurricular participants at State Middle School 1 Batu Sopang, Kabupaten Paser, Kalimantan Timur. The method used is descriptive quantitative with a futsal shooting skills measurement test and a dominant physical condition test of futsal extracurricular participants at State Middle School 1 Batu Sopang, Kabupaten Paser, Kalimantan Timur. The results of the study showed that most participants had a shooting skill level in the enough category, which was 10 people (80%), and a good category of 2 people (20%). The results of the overall physical condition test were in the enough category (with a conversion value of 6). The conclusion of the results of the study of the level of futsal shooting skills and dominant physical conditions of extracurricular participants at Middle School Negeri 1 Batu Sopang, Kabupaten Paser, Kalimantan Timur, the average shooting skill level was enough and the results of the physical condition test were in the enough category.

How to Cite

Hidayat, A., Arifin, R., & Erlina, M. (2025). Futsal Shooting Skill Level and Dominant Physical Condition in Extracurricular Activities of State Middle School 1 Batu Sopang, Kabupaten Paser, Kalimantan Timur. *Journal of Physical Education, Sport, Health and Recreation*, 14 (2), 554-560.

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INTRODUCTION

Sports are part of everyday human activities that help us to be physically and mentally healthy. In addition, sports also play a role in strengthening the country's ability to implement a sustainable development system. (Muliani et al., n.d.) in implementing a sustainable development system. plays an important role in encouraging, fostering, and developing the physical, spiritual, and social potential of individuals. One of the sports that is currently very popular with various groups is futsal. Futsal is popular among students, including at Middle School Negeri 1 Batu Sopang, because many schools provide extracurricular futsal facilities to develop students' talents and interests. In futsal, mastery of basic techniques is very important so that players can play effectively, both individually and as a team. One of the most crucial basic techniques is shooting, which is the effort to kick the ball towards the goal with certain accuracy and strength so that the ball can enter the opponent's goal. Shooting in futsal is a kick of the ball directed at the goal with high power and accuracy, which can be done using various parts of the foot such as the instep, the inside of the foot, or the tip of the foot (Putra Pratama et al., n.d.). Good shooting technique requires concentration and accuracy so that the ball can enter the opponent's goal. Players with a good level of shooting accuracy will be a threat to the opponent and have a great chance of scoring goals.

In addition to technical mastery, physical condition is also a determining factor in achieving futsal achievements. Good physical condition will greatly affect the player's ability to apply techniques, tactics, and mentality when competing. (Zidane Erlangga & Subagio, n.d.), The athlete's physical condition must be the main concern of the coach in designing an appropriate training program. Physical conditions in futsal can be divided into two, namely general physical conditions which include endurance, speed, strength, flexibility, and coordination and special physical conditions which are more dominantly needed according to the characteristics of futsal, such as agility, balance, explosive power, coordination, and quick reaction. Each aspect of physical condition greatly influences the mastery of basic futsal techniques, including shooting, so a planned and systematic physical training program is very necessary to achieve peak performance.

Based on the results of observations in the futsal extracurricular activities of State Middle

School 1 Batu Sopang, it is known that students' interest in futsal activities is quite high. Many students actively participate in futsal training to hone basic technical skills, especially shooting. However, there are variations in the level of shooting skills among team members, which are thought to be closely related to differences in the dominant physical conditions of each player. Some students show good shooting skills, while others still need improvement, especially in terms of strength, accuracy, and endurance during training and matches.

Previous research also strengthens the importance of physical condition in supporting basic futsal technical skills. (Mashud, 2019) emphasized that the main aspects of physical condition greatly influence mastery of basic futsal techniques. (Kurniawan et al., n.d.) In futsal, specific physical conditions such as leg muscle strength greatly determine technical performance, including shooting accuracy and power. Targeted physical condition improvement is essential to support optimal shooting skills. This is evidenced by the significant relationship between leg muscle strength and shooting accuracy in futsal players.

Based on the description, the formulation of the problem in this study is how is the level of futsal shooting skills of extracurricular participants at Middle School Negeri 1 Batu Sopang and what are the dominant physical conditions that influence futsal shooting skills. Tujuan penelitian This is to know the level of shooting skills and identify the dominant physical conditions that influence it. The proposed hypothesis states that there is a significant relationship between physical conditions such as endurance, strength, speed, and agility with futsal shooting skills. This is supported by research that shows that dominant physical conditions greatly influence the ability of shooting techniques in futsal (Kurniawan et al., n.d.), and targeted physical training can significantly improve the technical skills of futsal players (Annisa, 2018).

that in addition to physical and technical factors, the role of psychological factors in mastering futsal skills is also very important to note. Sports psychology, especially mental toughness, self-confidence, and stress management, can have a significant effect on a player's ability to execute a futsal kick, especially under high pressure conditions. Players who have good mental strength will be better able to maintain focus and calm in intense match situations, allowing them to kick more accurately and powerfully. High self-confidence also plays a big role in determining the success of a kick, because players who are confident

in their abilities tend to be more willing to take risks in making more difficult and creative kicks (Gould, 2016).

In addition, this study can also develop a focus on systematic and structured training patterns. To improve kicking skills, coaches must design training that not only focuses on physical development, but also more specific kicking techniques, such as long-distance kick training and accuracy training in various game situations. Training that focuses on leg strength and agility, for example, can strengthen the muscles that are important in executing kicks with optimal power and accuracy. This systematic training program will not only improve basic techniques, but also provide players with a deeper understanding of tactics in futsal matches (Kurniawan et al., n.d.).

Regular evaluation and monitoring of the physical and technical development of the players also needs to be included in this study. With regular evaluation, coaches can identify the strengths and weaknesses of each player, and make adjustments in the training program that are more focused on areas that need improvement. This also helps in measuring the effectiveness of the training program that has been implemented and provides useful feedback for players to improve their kicking technique (Mashud, 2019).

This research could also be expanded by analyzing the differences in kicking skills based on age, gender, or level of player experience. For example, do more experienced and older players have an advantage in kicking technique compared to younger but faster and more agile players. Further research in this area could provide a deeper understanding of how these factors affect kicking ability, and how coaches can design programs that better suit each player's characteristics (Annisa, 2018).

By incorporating psychological factors, periodic evaluations, and further analysis of differences in player characteristics, this study can provide a more comprehensive picture of the factors that influence futsal kicking skills. The results of this study are expected to provide clearer and more applicable recommendations for futsal coaches in designing training programs that not only focus on basic techniques, but also on the physical and psychological aspects of players to achieve optimal results (Gould, 2016; Annisa, 2018 ; Mashud, 2019).

METHODS

The research method used in this study is a quantitative descriptive method, namely

a method that aims to provide an overview of the calculation results of research variables by conducting simple statistical analysis. (Sukardi, 2003:201). This research was conducted in the field of State Middle School 1 Batu Sopang, and the entire data collection process took place in a natural atmosphere without engineering. The variables in this study consist of dependent variables and independent variables. The dependent variable is the level of futsal shooting skills measured through aspects of accuracy, strength, consistency, and shooting technique. The assessment is carried out by a shooting test from the second penalty spot as far as 10 meters towards the futsal goal which is divided into nine target areas with different scores in each area. Each participant kicks 10 times, and the total score is calculated based on the target area that is successfully achieved. While the independent variables are in the form of dominant physical conditions including speed, agility, cardiorespiratory endurance, and leg muscle explosive power. Speed is measured using a 30-meter sprint test, agility with the Illinois Agility Test which tests the ability to change direction quickly, leg muscle explosive power is measured through the Standing Broad Jump which measures the horizontal jump distance from a standing position, and cardiorespiratory endurance is measured using the Bleep Test (Pacer Test) which tests the ability to run continuously with increasingly shorter time intervals. Each test instrument has a clear implementation procedure and assessment criteria in accordance with applicable standards, so that the measurement of physical condition and shooting skills can be carried out objectively and systematically in this study.

The subjects of this study were all male students who participated in the futsal extracurricular at State Middle School 1 Batu Sopang, with a population of 20 people. The research sample was taken using a purposive sampling technique, namely the core team of futsal extracurricular participants totaling 12 male students, so that the sample truly represented the population studied. (Danuri & Siri Maisaroh, 2019; Rifa, n.d.). The type of data collected is quantitative data in the form of shooting test scores and physical condition measurement results of each participant. This data is numerical and will be processed using simple statistics.

Data collection was carried out directly in the field, where each participant took a series of tests according to the established instruments. The results of each test were recorded by the research team according to the standard procedures

of each instrument. After the data was obtained, the next step was to analyze the data by calculating the percentage of the results of each test to determine the distribution of the shooting skill level and the physical condition of the participants. The formula used in data analysis is the percentage formula, namely:

$$P = F/N \times 100\%$$

P : Presentation

f : Frequency searched

n : Total frequency

By using this method, it is expected to obtain a clear picture of the relationship between dominant physical conditions and the level of futsal shooting skills in extracurricular participants at State Middle School 1 Batu Sopang.

Table 1. Shooting Skills Test Norms

Assessment Criteria	Points Earned
Very Good	41-50
Good	31-40
Enough	21-30
Less	11-20
Very Less	1-10

Sumber: (Annisa, 2018)

Table 2. 30 meter running test norms (Speed)

Category	Seconds
Very Good	3.58 - 3.91
Good	3.92 - 4.34
Enough	4.35 - 4.72
Less	4.73 - 5.11
Very Less	5.12 - 5.50<

Sumber: (Wiriawan, 2017)

Table 3. Illinois Agility Test Norms

Category	Seconds
Very Good	< 15.2
Good	16.1 - 15.2
Enough	18.1 - 16.2
Less	18.3 - 18.2
Very Less	> 18.3

Sumber: (Wiriawan, 2017)

Table 4. Standing board jump age norm (Explosive power)

Age	Very Good	Good	Enough	Less	Very Less
14	6.11 - 9.0	6.6 - 6.11	6.1 - 6.4	5.6 - 5.11	4.8 - 5.4
15	7.5 - 9.0	6.11 - 7.3	6.6 - 6.10	6.1 - 6.5	5.2 - 5.11

Sumber : (Wiriawan, 2017)

Table 5. Pacer Test Norms (Endurance)

Age	Very Less	Less	Enough	Good	Very Good
14	≤ 41	42 - 58	59 - 75	76 - 81	≥ 83
15	≤ 51	52 - 69	70 - 86	87 - 93	≥ 94

Sumber: (Kemenpora, 2022)

Table 6. Physical Condition Component Norms

Sumber: (M. Dandy Aryadi, 2022)

Score range	Category
9,6-10	Very good
8,0-9,5	Good
6,0-7,9	Enough
4,0-5,9	Less
2,0-3,9	Very less

Table 7. conservation of physical condition component value

Category	Conservation Value
Very Good	10
Good	8
Enough	6
Less	4
Very Less	2

RESULTS AND DISCUSSION

Table 8. Shooting Skill Test

Value	Category	Frequency	Percentage
> 46	Very Good	0	0%
34-45	Good	2	20%
22-33	Enough	10	80%
11-21	Less	0	0%
0-10	Very Less	0	0%
Amount		12	100%

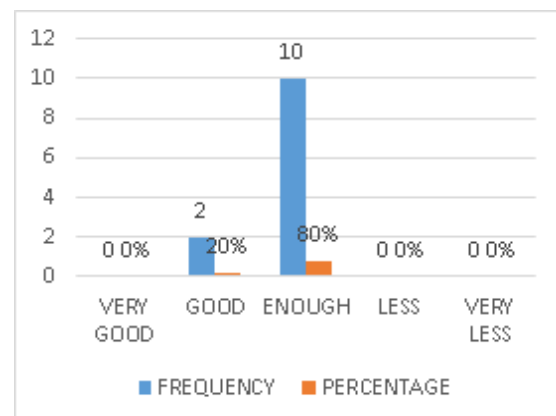


Figure 2. Shooting Skills Test

Based on the results **Table 8** of the shooting skills test of futsal extracurricular participants at Middle State Middle School 1 Batu Sopang, it can be concluded that most participants have a skill level in the enough category, which is 10 participants or 80%. While participants who are in the good category are 2 people or 20%. There are no participants who reach the very good, less, or very less category. Thus, it can be said that the majority of students have enough shooting skills, but there is still room for improvement so that more can reach the good or even very good category.

Table 9. Recapitulation of Speed Test, Agility Test, Endurance Test, Explosive Power Test data

speed test		agility test		endurance test		explosive power test	
sampel	%	sample	%	sample	%	sample	%
very good	0%	very good	0%	very good	100%	very good	0%
good	25%	good	8%	good	0%	good	0%
enough	17%	enough	83%	enough	0%	enough	33%
less	50%	less	0%	less	0%	less	17%
very less	8%	very less	8%	very less	0%	very less	50%
100%		100%		100%		100%	

Based on the results **Table 9** of the physical condition test of futsal extracurricular participants at State Middle School 1 Batu Sopang, it can be seen that the speed ability of the participants still needs to be improved, because as many as 50% are in the less category, 25% in the good category, 17% are enough, and 8% are very less, with no participants reaching the very good category. For the agility test, most participants or 83% are in the enough category, 8% are in the good category, and 8% are very less, while no participants are classified as less or very good. In terms of endurance, all participants or 100% showed very good results with the very good category, indicating that their endurance is very prime. However, in the explosive power test, the results were less than satisfactory, where 50% of participants were in the very less category, 33% were enough, and 17% were less, with none reaching the good or very good category. Overall, these results show that although the participants' endurance is very good, the speed and explosive power aspects still need special attention in the training program so that their futsal performance can be optimally improved.

Based on the results **Table 10** of the physical condition measurement of the futsal extracurricular participants of State Middle School 1 Batu Sopang, the average 30-meter running time

was 4.65 seconds which is in the enough category. This shows that the participants' speed is at a moderate level and can still be improved to support futsal performance. Furthermore, the results of the agility test using the Illinois Agility Test showed an average time of 16.9 seconds which is also quite enough, indicating that the participants' ability to change direction of movement is still within adequate standard limits but not yet optimal. In the explosive power test measured by Standing Broad Jump, participants obtained an average distance of 7.45 inches and were in the very good category, indicating very good leg muscle strength and explosion. However, for the endurance test using the Pacer Test, the average participant only achieved 51 turns so that it was in the very less category, which means that the participants' cardiovascular endurance is still inadequate and needs special attention in the training program. Overall, these results indicate that although the participants' explosive power is very good, the aspects of speed, agility, and especially endurance still need to be improved in order to support technical ability and overall futsal performance.

Table 10. Recapitulation of the Whole

Physical Condition	Test	Average	Category
Speed	Run 30m	4,65 Seconds	Enough
Agility	Llinois Agility	16,9 Seconds	Enough
Explosive Power	Standing Board Jump	7,45 Inch	Very Good
Endurance	Pacer Test	51 Return	Very Less

Table 11. Data table of results of all samples

Sampel	Shooting Skills	30 meter running	Illinois Agility	Standing board jump	Pacer	Physical Condition
1	27	5,22	17,28	6,8	23	Less
2	31	4,31	16,78	7,1	71	Enoguh
3	34	4,72	16,2	8,2	52	Enoguh
4	35	4,56	17,53	8,4	58	Enoguh
5	28	4,66	16,37	7,8	60	Enoguh
6	32	4,82	16,78	7,3	43	Less
7	32	4,91	16,50	6,11	38	Less
8	27	4,72	17,19	7	43	Less
9	29	4,28	16,28	7,8	73	Enoguh
10	23	4,72	16,12	7	49	Less
11	30	4,12	16,55	8,3	61	Enoguh
12	29	4,84	19,3	7	41	Less

Based on the physical and skills test results

Table 11 on 12 samples, it can be concluded that most participants are still in the “Less” category in physical condition, with only four participants in the “Enough” category. The participants’ shooting skills scores ranged from 27 to 39, indicating variations in shooting ability among participants. The 30-meter run time ranged from 4.12 to 5.22 seconds, while the Illinois Agility Test results showed the fastest time was 16.12 seconds and the slowest time was 19.3 seconds, indicating differences in agility levels. In the standing board jump test, the participants’ results ranged from 6.11 to 8.4, and the highest pacer score was 73 while the lowest was 31, indicating a significant difference in cardiorespiratory endurance. In general, the test results showed that the majority of participants needed to improve their physical condition and basic skills in order to achieve more optimal performance.

Based on the research results, the futsal shooting skill level of extracurricular participants of State Middle School 1 Batu Sopang is mostly in the enough category (80%) and a small portion in the good category (20%), with no participants in the very good or less category. The enough category shows that the participants have mastered the basic shooting techniques adequately, but still need improvement in terms of accuracy, kicking power, and consistency in order to reach a higher category. This is in line with the findings (Alfarizi et al., 2024) dan (Defa Saputra et al., 2024) which states that shooting skills are greatly influenced by regular practice and mastery of the right technique, as well as leg strength as the main physical factor in producing a hard and accurate kick.

The good category achieved by a small number of participants indicates that there are individuals who are able to apply shooting techniques well, possibly due to higher training intensity or more frequent playing experience. However, the absence of participants in the very good category indicates that training and coaching of shooting techniques in this extracurricular activity is still not optimal, which was also found in the study (Mashud, 2019) and (Nurramadhan et al., 2024) who reported that the lack of proper training programs was a major factor in the low level of shooting skills among young players.

In terms of physical condition, the test results showed quite significant variations. The speed and agility of the majority of participants were in the enough and less categories, which means that this physical ability still needs to be improved to support optimal shooting technique performance. Good speed is very important in

futsal because the game takes place with high intensity and requires fast reactions. This is supported by research stating that speed and reaction are the main physical components in supporting the performance of futsal athletes. (Rusydy et al., 2024). Agility also plays a role in positioning oneself to be able to shoot effectively. The explosive power of the participants’ leg muscles is in the very good category, which is an important physical capital to produce hard and accurate kicks, as explained by (Rosa Anggitaning Mahanani & Nanang Indriarsa, n.d.) However, the participants’ endurance is actually very low, which can hinder continued performance during the match because futsal requires excellent stamina. (Sofyan et al., 2017)). To increase cardiorespiratory endurance, high intensity training and the right type of training are required. (Arif Setiawan et al., n.d.)

This category difference indicates an imbalance in the development of the participants’ physical condition. Good explosive power without being supported by adequate endurance can cause a decline in performance during a long match. This indicates the need for a more integrated and comprehensive training program, which does not only focus on one physical component, but also pays attention to aspects of endurance, speed, and agility simultaneously. Research by (Sofyan et al., 2017) confirmed that a combination of cardiovascular and muscle strength training can significantly improve shooting technique skills in young futsal players.

The contribution of this research lies in the in-depth understanding of the relationship between physical condition and shooting skills in junior high school futsal extracurricular participants, which can be a basis for coaches in designing more effective and targeted training programs. This is supported by research (ARIFIN, n.d.) which states that “balance and explosive leg power have a significant effect on shooting ability in junior high school students, so developing these two physical aspects is very important in futsal training” ((ARIFIN, n.d.) However, the limitation of this study is the limited number of samples and only came from one school, so the results cannot be generalized widely. In addition, measuring physical conditions using several standard tests needs to be enriched with other methods to get a more comprehensive picture.

Overall, this study strengthens the theory that shooting technique skills are greatly influenced by physical condition, especially explosive power and endurance, and emphasizes the importance of structured and continuous training to

improve the performance of young futsal players.

CONCLUSION

Based on the results of the research that has been conducted, it can be concluded that the shooting skill level of futsal extracurricular participants at State Middle School 1 Batu Sopang is generally in the enough category. This shows that the participants have been able to master the basic shooting techniques, but still need improvement in terms of accuracy, strength, and consistency in order to achieve a higher level of skill. This finding also indicates that the coaching and training process that has been carried out so far has been going well, but there needs to be strengthening and variation in training so that more participants can achieve the good or even very good category.

The results of the overall dominant physical condition test were in the enough category. This study also found that the physical condition of the participants was very diverse. The explosive power of the participants' leg muscles was classified as very good and was an important asset in supporting shooting skills. However, the speed and agility aspects of the participants were still in the enough category, so they needed to be improved in order to support optimal technical performance in futsal games that require fast movement and dynamic changes in direction. Meanwhile, the participants' endurance was still very low, which could be an obstacle in maintaining performance during the match. This emphasizes the importance of the role of balanced and integrated physical conditions in supporting futsal shooting technique skills.

Thus, it can be concluded that to improve futsal shooting skills in extracurricular participants at State Middle School 1 Batu Sopang, efforts are needed to improve overall physical condition, especially in the aspects of speed, agility, and endurance. The results of this study also provide an overview that the development of a more structured training program that focuses on the physical and technical needs of participants is very important to support the achievement of futsal achievements at the school level.

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