



Analysis of Limb Muscle Strength on Accuracy of Shooting Futsal Ball SMA Negeri 2 Martapura Banjar Regency

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ABSTRACT

Futsal is favored by various groups, ranging from children to adults, many places organize futsal competitions, ranging from students to students and between clubs. Futsal is a sport that is played by every player and requires physical condition. The purpose of this study is to obtain percentage data about the relationship between leg muscle strength and the accuracy of shooting the ball. This study uses descriptive statistical methods. The population of this study were SMA Negeri 2 Martapura futsal players, Banjar Regency with a sample of 30 players. Descriptive statistics describe the percentage data on each variable consisting of the lowest, highest, mean, and standard deviation values. This research instrument uses 2 tests, namely the leg dynamometer test and targeted goal, where the leg dynamometer test (measuring leg muscle strength) shows that in the test results there are 3 students who have very good criteria, namely 10%, 9 students 30% good criteria, 13 students 43% medium criteria, 3 students 10% sufficient criteria, and 2 students very poor criteria less than 7%. While the targeted goal test (measuring the accuracy of shooting the ball) shows that in the test results, there are 6 students who have very good criteria, namely 27%, 8 students with good criteria 27%, 13 students with moderate criteria 43%, 3 students with sufficient criteria 10%, and no students with very poor criteria or 0%.

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INTRODUCTION

Futsal is currently favored by various groups, ranging from children to adults, men and women, many places organize futsal competitions, ranging from students to students and between clubs. Nowadays, many schools accept students who want to develop their abilities in the field of futsal by participating in extracurricular activities, as is the case at SMA Negeri 2 Martapura. Futsal is a sport played by every player and requires good physical



condition and good skills. Futsal games require special techniques, tactics and thinking (Mardhika, 2016). The goal of the futsal game is to put as many balls as possible into the opponent's goal, so the basic ability that needs to be mastered by a futsal player is how to shoot correctly towards the goal (Buya et al., 2021).

Every futsal player is required to have good basic technical skills, because it is a significant aspect in the game of futsal. In a futsal game, basic techniques that athletes must have, one of which is shooting. Shooting the ball is an important part of futsal, because the field is of course smaller than a soccer field so players can use many techniques to score goals (Rosita et al., 2019). Things that support creating a good kick require good leg muscles. Leg muscle is the ability of a muscle or group of muscles in a person to use as much energy as possible in the shortest possible time (Lahinda, 2019). Limb muscles support the body and provide initial energy (Wanena, 2018).

In principle, futsal games are similar to soccer games which use physical aspects, techniques, tactics, and strategies in playing (Aprilianto & Fahrizqi, 2020). However, what distinguishes the futsal game is the modification of the rules of the game and the field and the number of players. According to (Badaru, 2017) futsal is a sport similar to soccer, this can be seen from the basic techniques used in the game and the game also requires stamina, mental strength, and strategy. The difference between the two sports can be seen from the basic thing, namely from the pattern of attacking and defending.

The main goal of futsal games is to be able to penetrate the opponent's defense and create goal opportunities (Fitranto & Budiawan, 2019). This condition requires players to improve their skills in order to play more accurately, such as shooting. In the sport of futsal, goals occur more often than soccer, with high shooting accuracy, fast ball movement and frequent scoring by players. Accurate shooting will be a skill that greatly encourages success in the sport of futsal. By having accurate shooting, the use of energy will be more efficient and efficient.

Based on the results of observations and interviews with futsal coaches or coaches that researchers conducted at extracurricular futsal SMAN 2 Martapura, especially when participating in inter-school tournaments and general tournaments, there are still many players who do not master shooting properly or their shooting techniques are not good and correct, which is caused by the weak muscle strength of futsal players. Therefore, researchers want to conduct research on whether the test results between leg muscle strength and the ability of shooting accuracy of futsal players.

MATERIALS AND METHODS

This study uses descriptive statistical methods, in this analysis technique provides an initial description of each research variable. Where in the data description, each variable can be seen from the mean, maximum, minimum and standard deviation values (Hafni Sahir, 2022). Descriptive statistical research is a statistic used to analyze data by describing the data that has been collected without intending to make conclusions (Aldy Purnomo, S.E., M.S, 2017). Thus, it can be seen that quantitative descriptive research is research that only describes, examines, and explains a phenomenon with data (numbers) as it is without intending to test a particular hypothesis (Sulistyawati & Trinuryono, 2022).

This research was conducted at SMA Negeri 2 Martapura, Banjar Regency, on Tuesday, November 7, 2023. The population used in this study were futsal players of SMA Negeri 2 Martapura, Banjar Regency with a sample of 30 students who were active in futsal extracurriculars.

This research stage begins with preparing the research instruments to be used. The tools used are the Leg Dynamometer to measure leg muscle strength and the targeted goal test to measure the accuracy of shooting the ball towards the goal. In this descriptive statistical data analysis technique, researchers use a program as a data processing tool, namely SPSS version 23. Descriptive statistics are methods related to data collection and presentation so as to assess the quality of data in the form of variable types, summary statistics, namely to determine the highest, lowest, average, and standard deviation values. After the data was collected, the researcher then inputted the data and did the coding with the excel program. Furthermore, researchers categorized the data using the interval formula (Cahya et al., 2022), as follows:

$$P = \frac{F}{N} \times 100\%$$

Description:

P = Percentage

F = Number of values/score

N = Number of data/samples

RESULTS AND DISCUSSION

Results

In data collection is done with tests and measurements in sports, namely; (1) leg muscle strength with a Leg Dynamometer, (2) accuracy of shooting the ball into a futsal goal using the instructions for shooting the ball towards the goal. Data analysis techniques are carried out by determining the highest value, lowest value, average, and standard deviation. Furthermore, determining the results of the leg muscle strength test and the results of the ball shooting accuracy test in %. In table 1. Shows data on descriptive statistical results:

Table 1. Data Descriptions

	N	Minimum	Maximum	Mean	Std. Deviation
Limb Muscle Strength	30	81	285	176.53	55.842
Shooting Accuracy	30	6	23	16.97	3.987
Valin N (listwise)	30				

The results of the data description shown in the table above show that:

- The results of the leg muscle strength test conducted on 30 students showed a maximum value of 285, a minimum value of 81, an average of 176.53 and a standard deviation of 55.842.
- The results of the shooting accuracy test on 30 students show a maximum value of 23, a minimum value of 6, an average of 16.97, and a standard deviation of 3.987.

Based on the data from the results of this research activity given to SMA Negeri 2 Martapura futsal players, Banjar Regency through the leg muscle strength test and the accuracy of shooting the ball as many as 30 students obtained the following percentage results:

Table 2. Leg muscle strength in (%)

No	Number of Students	Criteria	Percentage
1	3	Very good	10%
2	9	Good	30%
3	13	Medium	43%
4	3	Simply	10%
5	2	Very Less	7%
Total	30		100%

Based on the indicators listed in table 2 above, the criteria indicators are obtained by conducting leg muscle strength tests during the research process. The indicator of excellent criteria is 10%, the indicator of good criteria is 30%, the indicator of moderate criteria is 43%, the indicator of sufficient criteria is 10%, and the indicator of insufficient criteria is 7%. Based on this data, a total percentage of 100% is obtained. The next indicator measured is the accuracy of shooting the ball and the following is the data from the Futsal Shooting Accuracy test:

Table 3. Accuracy of shooting the ball in (%)

No	Number of Students	Criteria	Percentage
1	6	Very Good	20%
2	8	Good	27%
3	13	Medium	43%
4	3	Simply	10%
5	0	Very Less	0%
Total	30		100%

Based on the indicators listed in table 3 above, the criteria indicators were obtained by conducting targeted goal tests during the research process. The indicator of very good criteria is 20%, the indicator of good criteria is 27%, the indicator of sufficient criteria is 43%, the indicator of deficient criteria is 10%, and the indicator of very deficient criteria is 0%. Based on this data, a total percentage of 100% is obtained.

Discussion

This study aims to determine how well the test results between leg muscle strength and the ability of shooting accuracy of SMA Negeri 2 Martapura futsal players, Banjar Regency. Futsal is a very fast and dynamic game. In terms of the relatively small size of the field, there is almost no room for error. Therefore, it requires cooperation between players through accurate passing and being able to create goal opportunities through precise shooting.

Futsal is a game sport that uses a ball, field, and is played by two teams consisting of 5 players (Herlambang et al., 2021). In this case, the surface of the futsal field must be flat, not bumpy and not slippery. Generally, the standardization of futsal field surfaces used in world international tournaments is to use wood or similar materials.

The definition of skill is identical to the skills that include knowledge, technique, strength, speed, and accuracy of kicking the ball in a futsal game. In this study, the notion of accuracy can be interpreted in the accuracy of the target in shooting. Shooting is generally done to create opportunities to become goals. In shooting techniques using the instep, the position of our gaze is towards the ball, the position of the knee above the ball, bend the toes down while kicking (Kurniawan & Iqbal, 2021).

So, to create precise and maximum shooting, coordination training is needed. The better the coordination of the eyes and feet, the accuracy of the resulting shooting will be

good too. Because in general, it is because coordination is very necessary and important in every form of movement in sports.

This study was conducted using two instruments, namely to measure leg muscle strength using a Leg Dynamometer with the reliability of this test of 0.86 and the validity of this test is face validity (Setyo W & Fitria Dwi, 2016). While the targeted goal test, this test was adapted from a test conducted by Arki Taupan Maulana (2009: 36), which includes face validity and logical validity with a reliability coefficient for shooting using the instep of the foot of 0.940, and for shooting using the tip of the foot of 0.967, because the reliability coefficient value of the two instruments is greater than 0.6. So it can be concluded that this instrument is reliable in (Heriyanto, 2016).

CONCLUSION

Based on the literature and research results, this conclusion is: The results of the description of leg muscle strength data conducted on 30 students show a maximum value of 285, a minimum value of 81, an average of 176.53 and a standard deviation of 55.842 while the ball shooting accuracy test on 30 students shows a maximum value of 23, a minimum value of 6, an average of 16.97, and a standard deviation of 3.987. Where the results of the limb muscle strength percentage data are obtained from the indicator of very good criteria by 10%, good criteria indicators by 30%, moderate criteria indicators by 43%, sufficient criteria indicators by 10%, and indicators of less criteria by 7%. Based on this data, a total percentage of 100% is obtained. While the percentage of accuracy of shooting the ball from the indicator of very good criteria is 20%, the indicator of good criteria is 27%, the indicator of sufficient criteria is 43%, the indicator of insufficient criteria is 10%, and the indicator of very poor criteria is 0%. Based on this data, a total percentage of 100% is obtained.

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CONFLICT OF INTEREST

There are no conflicts of interest in this article.

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