

### 12 (3) (2023) 376 - 382

## Journal of Physical Education, Sport, Health and Recreations



http://journal.unnes.ac.id/sju/index.php/peshr

# Effect of Limb Muscle Explosiveness and Balance Against Futsal Shooting Skills at Club The Brothers

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#### **Article History**

#### Received June 2023 Accepted October 2023 Published Vol.12 No.(3) 2023

#### **Keywords:**

Limb Muscle Explosiveness; Balance; Shooting; Futsal.

#### Abstract

The research objective was to determine the effect of leg muscle explosive power and balance on the ability to shoot futsal at Club The Brothers. The type of research used is descriptive research which is correlational in nature. The sample is part of a number of characteristics possessed by the population used for research. In this study, 10 members of The Brother FC were used as samples. The instruments used were the leg muscle explosive power test, balance test and shooting ability test. Data analysis techniques used in this study were descriptive tests, normality tests, linearity tests and regression tests using the SPSS Version 24.00 program. The results showed that the leg muscle explosive power variable had a toount of 3.994 while ttable = 2.228 so toount > ttable. The balance variable has toount, which is 6.007, while ttable = 2.228, so toount > ttable. From the results of data analysis, it was obtained that the Fcount was 65.878 and the sig. 0.000. Fcount value (65.878) > (2.228) and sig. smaller than 0.05 or a value of 0.000 < 0.05. The conclusion is that the ability of the independent variables to explain variable variation is quite strong.

#### How to Cite

Syaifullah, S., Kahar, I., Rahmatia., & Riswanto, A. H. (2023). Effect of Limb Muscle Explosiveness and Balance Against Futsal Shooting Skills at Club The Brothers. Journal of Physical Education, Sport, Health and Recreation, 12 (3), 376-382.

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#### **INTRODUCTION**

Sport is an activity that is needed by the body that can be done anywhere and anytime, but it would be better if sports activities were carried out by utilizing the appropriate and readily available facilities.(Al'ahsan & Muldan, 2021). In an effort to improve sports performance, especially in the sport of futsal, each individual has chosen sport as his profession. Must try as hard as possible to solve problems that are obstacles to the realization of the development and improvement of sports achievements(Friday, 2020). The lack of open fields is what lies behind futsal as an alternative to channeling hobbies to exercise. Sport is a culture of physical activity carried out by humans which is carried out by muscles and controlled by the humans themselves(Rahman et al., 2021). Sport is an aspect of activity that must be developed in efforts to build the nation, so that sport is expected to become a necessity of life for all Indonesians, this means that the opportunity for people to excel in sports is also very open and knows no class, especially for young people.(Bagustiadi, 2013).

Futsal games can be played on a narrower area and with more flexible time because futsal games can be played indoors. If the body is in good health, it will be able to carry out optimal activities. Therefore sport is one of the recommended activities in everyday life(Mahanani & Indriarsa, 2021). In recent years the development of this sport of futsal has greatly increased so that it has become the spotlight of many people and has even become a spectacle for connoisseurs directly or through television media.(Rosita et al., 2019). Futsal is a complex sport, this is due to the need for special techniques and tactics so that players are required to have basic futsal technical skills. Futsal is one of the many games that are loved by people in all parts of the world. There is a special excitement that is felt by those who play this type of big ball sport. Besides being able to create an atmosphere of togetherness between individuals(Adhi et al., 2021). Futsal is a ball game played by two teams, each team consisting of five people with the aim of putting the ball into the opponent's goal, by manipulating the ball and feet. (Sumpena & Amalia, 2018). Futsal is a variation of soccer with a ball that is used smaller and heavier and futsal requires good preparation for physical training in order to achieve maximum performance.(Rismawati et al., 2018). Futsal is a sports activity involving the ball as a playing medium(Bagustiadi, 2013). Futsal is one of the sports games that are very popular with the

public besides football. Futsal games can be categorized as recreational sports and achievement sports(Hartanto & Purnama, 2018). Futsal is a ball game played by two teams, each consisting of five people(Hidayat & Riswanto, 2021).

Futsal was first popularized in Montevideo, Uruguay in 1930, by Juan Carlos Ceriani. The uniqueness of futsal has received attention throughout South America, especially in Brazil(Hera, 2020). Futsal games can run smoothly, regularly and interestingly if the players master the elements in the game of futsal, namely the mastery of basic techniques. indoor soccer played by 5 people per team. This game turned out to be in great demand by the people of South America(Wijanarko, 2021). Basically the game of futsal is not much different from the game of football, the difference lies only in the size of the field so that the game of futsal is more directed at the efficiency of relatively fast movements, because each player must be able to move quickly to make the right decisions and produce goals against the opponent's goal.(Ramadan, 2021). Futsal is recognized by FIFA and held the first world cup in 1989 in Rotterdam, Netherlands. In Indonesia, futsal is a sport that has become a favorite among young people and parents who are still fit. Even futsal itself has plundered women. Futsal itself is under the auspices of the BFN (National Futsal Agency), a body that has built and developed futsal in Indonesia until now the Pro Futsal League is held every year, one of which is the IFL Pro league (Indonesia Futsal League).

In the game of futsal it is very important for players to have good shooting skills, especially for players who are in the front position. The ball shooting technique is a basic technique by kicking hard at the goal with the aim of scoring goals. This requires an accurate kick in order to produce a ball position that is directed at a place that is difficult for the goalkeeper to reach. Hard shooting can be done using the outside or inside of the foot in a position near the toe. Apart from that, you can also use your instep as another option for shooting and players can also use their toes or shoes which can produce a strong kick with the ball straight ahead.(Iqbal, 2020).

Kicking or shooting is one of the basic techniques that must be possessed by futsal players, to score goals against opponents in a match(Rosmawati, 2016). Shooting is one of the individual abilities in the game of football with the aim of putting the ball in the goal(Rosita et al., 2019). Shooting is a kick towards goal to produce a goal. Shooting has the characteristics of a very fast and hard ball speed and is difficult for

the goalkeeper to anticipate and even the players from the opponent. good shooting must combine the strength and accuracy of the shot.

Shooting can be done with all parts of the foot, especially on the instep, the inside of the foot, the outside of the foot and the toe. In futsal games, shooting techniques are complex techniques in their implementation. Accuracy can be defined as thoroughness or surprise. Accuracy is a person's body movements to control the free movement of a target(Subk & Bulqin, 2018)It takes a physical component in the form of good leg strength. This can be obtained from sufficient physical exercise and learning techniques slowly and gradually. When shooting at targets, explosive power is used to produce fast, powerful and accurate kicks. The explosive power of the leg muscles is very necessary, because if a player wants to kick the ball far and in which direction the ball must be directed, one aspect that needs to be considered is the explosive power of the leg muscles.(Arifedno, 2021). Errors that occur when shooting, one of the contributing factors is the lack of accuracy in shooting the opponent towards the goal so that players can master good and precise shooting techniques in shooting accuracy in futsal games, it is necessary to apply proper training in order to get the right shooting accuracy. Good(Juliandri et al., 2022). That's because in shooting people only rely on one leg and the other leg swings to kick the ball assisted by the hands to balance the body.

One component of the physical condition that is important in shooting at goal is explosive power, more specifically the explosive power of the leg muscles. The leg muscle explosive power factor has a significant relationship in shooting accuracy(Rahmi & Syahara, 2020)If you observe the ability of The Brothers team, there are players who have hard, strong and accurate kicks or passes, but there are players who are not quite right in shooting and have weak kicks. In order to produce an accurate shooting, coordination of swing movements, eye sight, foot contact with the ball is needed and supported by excellent physical abilities, especially the explosive power of the leg muscles. Shooting is the process of kicking the ball as fast and accurately as possible. The best shooting technique is done with the instep. The key to shooting strength is in leg strength and optimal kick taking angles(Heriyanto, 2016)

Explosive power concerns the strength and speed of dynamic and explosive muscle contractions and involves maximal expenditure of muscle strength in the shortest possible time. So that there are two very important components

in explosive power, namely muscle strength and muscle speed, then explosive power can be manipulated or increased by increasing muscle strength without neglecting muscle speed or vice versa can increase(Adhi, B., 2021). The explosive power of the leg muscles plays a very important role in the results of shooting at goal. Leg muscle power is needed to support the legs so they can kick the ball hard. With strong leg power, it causes the ball to be pushed stronger by the legs in the hope that the ball will be difficult for the goalkeeper to catch. Muscle speed without neglecting muscle strength. So, the explosive power of the leg muscles is the ability of the leg muscles to exert maximum strength with very fast or short contractions to be able to overcome the load that is obtained or given. (Gunadi et al., 2020).

Explosive power is also known as explosive power. Explosive power concerns the strength and speed of dynamic and explosive muscle contractions and involves maximal expenditure of muscle strength in the shortest possible time. (Rahman et al., 2021). Explosive leg muscle power is the ability to display maximum strength and maximum speed explosively in a fast and short time to achieve the desired goal(frayogha & afrizal, 2019). strength describes the ability of the muscles to overcome loads by lifting, hitting, rejecting, pushing, while speed indicates the ability of the muscles to overcome loads with very fast contractions, muscle strength and muscle contraction are the main characteristics of explosive power.

Balance is one of the most important factors for quality of life, considering that it is necessary, for all daily movements, to have static or dynamic balance, which depends on our effector organs' perception of space and other parts of the body, as well as the position and force / tension they have to exert. do for body movement(Rosita et al., 2019). Balance is the ability to maintain proper posture and body position when standing (static balance) or when performing movements (dynamic balance).(Zulvikar, 2016). Balance is a complex interaction of integration/interaction of sensory systems (vestibular, visual, and somatosensory including proprioceptors) and musculoskeletal (muscles, joints, and other soft tissues) that are modified/regulated in the brain (motor control, sensory, basal ganglia, cerebellum, association area) in response to changing internal and external conditions(Lutfia Hakim et al., 2022). Static balance is the body's ability to maintain balance in a fixed position (when standing on one leg, standing on a balance board).(Hartati et al., 2020).

Based on the results of observations found by researchers, this team has often participated in matches held by club managers or other futsal events. The Brothers futsal team is a team from the city of Palopo, South Sulawesi, which was formed from several futsal athletes. However, if you look at the ability of this team in terms of shooting accuracy, they were still unable to take advantage of opportunities in training and matches because their shots went wide, bounced over the bar or hit opposing defenders. This is based on information from the team coach who admits that there is still a lack of shooting accuracy for the players. This is because players think accuracy is not too important compared to power when shooting. This is also due to the lack of creativity of the players in practice. To support the ability and accuracy of shooting in futsal games, players must have physical condition components such as leg explosiveness and balance.

The purpose of this study was to determine the effect of leg muscle explosive power and balance on the shooting ability of futsal players. Previous research results(Rahman et al., 2021). leg muscle explosive power contributes to the ability to shoot in futsal games.

#### **METHODS**

Type of Research This research uses a correlational research type, which aims to determine the extent of the relationship between the independent variables, namely leg muscle explosive power and balance, with the dependent variable, namely shooting accuracy. In this study the independent variable was the explosive power of the leg muscles  $(x_1)$  and Balance $(x_2)$ , while the dependent variable is shooting accuracy (y). The research aims to find out whether or not there is an influence and if there is how much influence it has and whether it means or not(Physical & Recreation, 2021). This research will be carried out in the Sinar Setuju Futsal field, Wara Selatan District, Palopo City, South Sulawesi Province. Population is all objects that have certain characteristics. The sample is part of a number of characteristics possessed by the population used for research. In this study, 10 members of The Brother FC were used as samples.

There are several tests that will be given to the sample, namely the Leg Muscle Explosive Power Test with (Standing Broad Jump) which aims to measure leg explosive power, the Balance Test aims to measure the athlete's balance in motion, and the Futsal Shooting Accuracy Test. shooting ability. The collection techniques used in this study are as follows: (1) Observation, carried out to obtain information through direct observation in the field where the research is conducted. (2) Literature, used to obtain the concepts and theories needed in this study. (3) Measurement The measuring instruments used are the leg explosive power test, the balance test and the futsal shooting accuracy test.

#### **RESULTS AND DISCUSSION**

The research results obtained through tests and measurements consist of dataleg muscle explosive power, balance againstfutsal shooting skills at Club The Brothers, then analyzed using descriptive statistical techniques and inferential analysis. Descriptive data analysis is used to provide an overview of the research, then test requirements analysis or test assumptions, namely the data normality test and linearity test. Inferential data analysis was carried out to obtain the results of hypothesis testing in research.

Descriptive analysis which includes the mean, median, mode, standard deviation, variance, range, minimum, maximum and sum.

**Table 1.** Results of Descriptive Data Analysis

Statistics	Limb Muscle Explosiveness	Balance	Shooting Ability
Means	1.8510	83,10	10,20
Median	1.8500	85.00	11.00
Mode	1.88	85	11
SD	0.19116	4,508	2,781
Variances	0.037	20,322	7,733
Range	0.67	13	9
minimum	1.50	77	5
Maximun	2,17	90	14
sum	18.51	831	102

Table 1 shows that the leg muscle explosive power test has a mean value of 1.8510, a median value of 1.8500, a mode value of 1.88, a standard deviation value of 0.19116, a variance value of 0.037, a range value of 0.67, the minimum value is 1.50, the maximum value is 2.17 and the sum value is 18.51. Balance test with a mean value of 83.10, a median value of 85.00, a mode value of 85, a standard deviation value of 4.508, a variance value of 20.322, a range value of 13, a minimum value of 77, a maximun value of 90 and a sum value of 831. Shooting ability test with a mean value of 10.20, a median value of 11.00, a mode value of 11, a standard deviation value of 2.871, a variance value of 7.733, a range value of

9, a minimum value of 5, a maximum value of 14 and sum value of 102.

It is known that the normality test for the significant value of leg muscle explosive power is 0.730> 0.05. The significant value of the balance is 0.246> 0.05. The significant value of the ability to shoot is 0.630> 0.05. Then the three variables follow a normal distribution or normal distribution.

The results of the linearity test obtained an F value (defiation from linearity) between the leg muscle explosive power variable (X1) and shooting ability (Y) of 2.786 at a significance of 0.432, F value (defiation from linearity) between the balance variables (X2) with a shooting ability (Y) of 0.1920 at a significance of 0.314. This shows that the F value is not significant, so the relationship between variables is declared linear. Thus, the simple and multiple regression tests can be continued to determine whether the hypothesis in this study is accepted or not.

The results of data analysis have sig. 0.000. sig. value smaller than 0.05 or a value of 0.000 <0.05, then H1 is accepted and H0 is rejected. The limb muscle explosive power variable has a tount of 3.994 while ttable = 2.228 so tount > ttable and it can be concluded that the leg muscle explosive power variable has an influence on shooting ability. The balance variable has a tount of 6.007 while ttable = 2.228 so tount > ttable and it can be concluded that the balance variable has an influence on shooting ability. A positive t value indicates that the variable leg muscle explosive power and balance have a positive effect on shooting ability.

The results of data analysis, it was obtained that the Fcount was 65.878 and the sig. 0.000. Fcount value (65.878) > (2.228) and sig. smaller than 0.05 or a value of 0.000 < 0.05, then H1 is accepted meaning that together the explosive power of the leg muscles and balance have a significant effect on shooting ability. R value (0.974) it can be concluded that the ability of the independent variables to explain the variation of the variable is quite strong.

Leg muscle explosive power has a significant relationship and makes a significant contribution to the shooting ability of the futsal club players at NUSATAMA Padang Middle School(Rosmawati, 2016). Leg muscle power is needed to support the feet so they have the ability to kick the ball hard. The fast flow of the ball being kicked by the player will make it more difficult for the opposing goalkeeper to block the ball, so the chance of a goal will be greater.(Nazalla, 2016).

Leg muscle explosive power has a significant relationship with shooting ability in futsal games. This means that the better the explosive power of a student's leg muscles, the better their ability to do shooting kicks in futsal games(Rahman et al., 2021). Balance greatly determines a person's ability to maintain body position to remain stable in playing futsal(Rosita et al., 2019). To achieve maximum results in shooting accuracy, balance training is very important and absolutely owned by a futsal player. The better the balance, the resulting shooting accuracy will be good too(Nazalla, 2016).

#### **CONCLUSION**

Based on research onClub The Brothers explains that the physical component consists of elements of leg muscle explosive power and balancedetermines the success of a futsal player in shooting towards the goal. Physical training needs to be done gradually in order to improve a player's ability to play futsal. So it can be concluded that the role of leg muscle explosive power and balance together have a significant influence on shooting ability Club The Brothers.

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