



Contribution of Limb Muscle *Power*, Flexibility of Limb Muscles, and Self-Confidence to the Accuracy of Futsal *Shooting*

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Info Artikel

Article History:

Received 23 August 2022

Approved 30 December 2022

Published 05 Januari 2023

Keywords:

Limb muscle power, The flexibility of limb muscles, confidence, Shooting Accuracy

Abstract

The objectives of this study are 1) To analyze the contribution of limb muscle power to the accuracy of ball shooting in the women's futsal student activity unit in Semarang 2) To analyze the contribution of limb muscle flexibility to the accuracy of ball shooting in the women's futsal student activity unit in Semarang 3) To analyze the confident contribution to the accuracy of ball shooting in the women's futsal student activity unit in Semarang 4) To analyze the contribution of power and flexibility limb muscles against the accuracy of shooting the ball in the women's futsal student activity unit in Semarang. This research uses quantitative methods with a correlation design. The population in this study was the women's futsal activity unit at UPGRIS, UNNES, and UNISSULA. The sampling technique uses purposive sampling consisting of 70 female students. The results of this study: 1) Power of limb muscles contributes to the accuracy of ball shooting at Women's Futsal UKM in Semarang. 2) The flexibility of the limb muscles contributes to the accuracy of shooting the ball at the Women's Futsal UKM in Semarang. 3) Confidence contributes to the accuracy of ball shooting at the Women's Futsal UKM in Semarang. 4) Limb muscle power and limb muscle flexibility contribute to the accuracy of ball shooting at the Women's Futsal UKM in Semarang. Based on the results of the study, it can be concluded that there is a significant contribution between limb muscle power, limb muscle flexibility, and confidence in the accuracy of futsal shooting based on simultaneous regression tests.

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INTRODUCTION

Sports have become an individual, group, or social activity that has gone global and is an object that is never boring for society because sports can make happy, smile and even cry. In the world of education, physical education is one field of knowledge studied, starting from the kindergarten, elementary, junior high, high school, and tertiary levels in both public and private schools throughout Indonesia. According to Fitranto (2020), futsal is one of the mini-football games that are played indoors because the size of the field is smaller than the football field and has game rules, the number of players and how to play which is also different from football, because it is played indoors this sport can be played at any time without being hindered by the ever-changing weather. According to (Fachrezzy, 2021), The quality components of physical condition consist of endurance, strength, balance, agility, and speed. This is intended to achieve maximum achievement. One achievement sport that has developed widely in Indonesian society is the futsal branch.

Futsal is a sport in great demand by the public because futsal is very good for maintaining and improving fitness. According to Christian (2021), futsal is a sport that is starting to be in great demand by the public because futsal is very good for maintaining and improving fitness. According to Suryadi (2021), futsal is a high-speed and dynamic game. According to Buya (2021), futsal games today are much loved by the public, especially young people, both men, and women.

According to Prasetyo (2019) Futsal character dynamic, exciting, and full of challenges should make students enthusiastic in participating in learning so that students can achieve maximum participation, and one of the goals of PA is physical fitness is also realized. This sport is for recreational purposes and achievements, along with the progress of the times and the needs of recreation in humans; the mark of futsal is its own attraction because it can be done casually and does not require such a large room. Abdurrahman (2020) Futsal is a game where five traditional football players each play in a different team, 11 players in a group; the size of the field and the ball is smaller than the size of the football field. The rules of the futsal game have been regulated by FIFA in order to uphold the value of fair play. Thus futsal has become a professional sport recognized by FIFA. Futsal is a sports game adapted from the game of football. Therefore the basic techniques of playing futsal are no different from the basic techniques of football, such as passing, shooting, controlling, and dribbling.

According to Burhaein (2020), Leg muscle power is needed to support the leg to kick the ball hard, according to Suryatma (2021). According to Prabowo (2020), muscle power is a combination of strength and speed, namely the ability to exert force quickly to provide the best momentum for the body or object to bring it to the desired distance. According to Abi (2022), until now, the practical form of exercise to increase leg muscle power is still being debated. According to Munizar (2017), power is the ability of muscles to direct maximum strength quickly.

The role and explosive power of the leg muscles are decisive because the explosive power of the leg muscles that swing the legs kicking toward the front is carried out quickly and in a relatively short time. According to Limb muscle strength means a person's ability to make full use of limb muscle strength in the short or long term. According to Sabillah (2022), box jump training affects the increase in leg power.

Limb muscle flexibility is the ability of a person to move a body or part of the body in a range of motion without damaging joints and muscles. Menurut Cejudo (2020) Muscle flexibility is one of the critical components of athletic performance, together with strength, endurance, speed, and coordination. According to Silvino (2020), flexibility is regarded as one of the main physical fitness parameters related to health and performance. Menurut Ihsan (2022) Flexibility is defined as the ability of joints to perform movements over a wide range. According to O'Sullivan (2012), athletes with reduced flexibility may expose their muscles to potentially damaging lengthening forces. According to Arfanda (2022), flexibility is an essential contributor to sports performance; the fact is that high levels of flexibility can reduce the risk of injury. According to Aminudin (2020), The combination of flexibility and leg muscle strength can produce precise and powerful kicks. The flexibility of the leg muscles created by the leg muscles is used to move the legs to swing obliquely backward to kick the ball. Due to the solid angular movement, when the object (ball) touches, it moves forward according to the maximum size

of the leg swing, helping the leg muscles to produce incredible power.

According to Schaper et al. (2020), accuracy is the ability to direct a shot in the right direction or a specific path toward the opponent's goal. According to Rifki Alamsyah (2021), shooting is needed in futsal games. According to Rosita (2019), Shooting with precise accuracy is required to complete an attack that has been built. The accuracy of putting the ball into the futsal goal is one of the basic futsal techniques, but it is challenging to learn, especially for inexperienced players. According to Desta Sintoko (2019), shooting accuracy football of which is fixed target practice and change target practice. According to Gusri Maulana (2020), shooting ability is essential for players because they can't score goals without this ability. So every player must have a level of shooting accuracy when cutting a plan because the level of accuracy of kicking the ball into the program will determine the value/score when doing a match.

Arham (2019) found that players' confidence significantly impacts shooting ability more than strength, speed, and agility. According to ÇAR (2022), Descriptive statistics were obtained by calculating percentage, frequency, average, and standard deviations for each lower dimension of decision-making style and self-confidence of the futsal. According to Fitri (2018), Self-confidence is one of the essential aspects of personality in adolescent development. So every player with high self-confidence usually succeeds while performing optimally.

I have observed the women's futsal

Student Activity Unit (UKM) at PGRI Semarang University (UPGRIS). She conducts training every Tuesday, Thursday, and Friday futsal field of the PGRI Semarang University sports building. Based on data observations made in the student league in the last five years, which was attended by the women's futsal team of PGRI Semarang University, in 2016, the achievements of the women's futsal team only reached the group phase round, the 2017 student league the women's futsal team also only came the group stage, the 2018 student league, the women's futsal team, won 3rd place, 2019 Student League The women's futsal team won 2nd place. In 2020 the fake women's futsal team conducted a Student Activity Unit (UKM) and missed participating in the student league due to the COVID-19 pandemic. O data preservation carried out on the women's futsal team of Semarang State University (UNNES) is held every Monday, Wednesday, and Friday at the Semarang State University Sports Building (UNNES) and data observations are carried out on the women's futsal team of Sultan Agung Semarang Islamic University (UNISSULA) which is held every Friday and Sunday at the Sports Building of the Islamic University of Sultan Agung Semarang (UNISSULA) has also not received any achievements in the student league. Based on the results of direct observations in the field conducted by researchers at three women's futsal SMEs at three different universities, the female futsal players of PGRI Semarang University (UPGRIS), Semarang State University (UNNES) and Sultan Agung Semarang Islamic University (UNISSULA)

still not optimal in mastering the futsal game and researchers see the physical condition of female futsal players at three different universities PGRI Semarang University (UPGRIS), Semarang State University (UNNES) and Sultan Agung Islamic University Semarang (UNISSULA) is still far from expected, this is evident from almost every participating in the championship, especially in the student league championship and POM Rayon women's futsal players of PGRI Semarang University (UPGRIS), Semarang State University (UNNES) and Sultan Agung Islamic University Semarang (UNISSULA) often experience a decrease in physical condition when Compete. This can be seen from the matches that are carried out for 2x20 minutes. In the first round of play, the futsal team UPGRIS, UNNES, and UNISSULA struggled to pass the opponent; only a few players had the skills to pass the opponent. At the time of the second round, players were tired and unable to control the game; at the last time, counterattacks often made the futsal team women UPGRIS, UNNES, and UNISSULA concede because players lost during sprints. Players are easily mentally exposed when they realize their goals, and players experience a decrease in confidence in their abilities that the players have.

The results of data observations in the field are related to muscle power that still needs to be more robust and balanced. This is because players when shooting, are still too weak and too easy to be anticipated by the opponent's goalkeeper. Then the flexibility of the ankle also plays a vital role in shooting, so the

flexibility of the ankle that is not optimal is also the main obstacle for some people in shooting futsal because in the game of futsal, when making movements if you do not have outer joint movement space will greatly hinder and interfere and can even cause injury. Players doubt their physical condition, shout at the audience, and fear the opponent's ability to have quality.

During the training hours of the Student Activity Unit (UKM) futsal material, researchers saw that students often made technical and movement mistakes when defending or attacking the opponent's goal. These mistakes include when performing movement techniques with the ball; for example, when kicking the ball into the plan, often the result of the kick does not enter the target to the goal (goal). The objectives of this study are 1) To analyze the contribution of limb muscle power to the accuracy of ball shooting in the women's futsal student activity unit in Semarang 2) To analyze the contribution of limb muscle flexibility to the accuracy of ball shooting in the women's futsal student activity unit in Semarang 3) To analyze the confident contribution to shooting accuracy ball in the women's futsal student activity unit in Semarang 4) To analyze the contribution of power and flexibility of limb muscles to the accuracy of shooting the ball in the women's futsal student activity unit in Semarang.

METHODS

The variables studied: 1) free variables are limb muscle power, limb muscle flexibility,

and confidence. 2) bound variables, namely: shooting accuracy. This research was conducted at three universities in Semarang.

The method used in this study is a regression method (Ramadan & Juniarti, 2020) to determine the *power* of the tungkai muscles, the flexibility of the limb muscles, and confidence in the accuracy of *shooting* for futsal players. According to Adhi (2017), the exercise method is a scientific way of providing treatment programmatically to improve the athlete's talents, athlete's skills, and physical condition of the athlete according to the sport being carried out. The actual data collection instrument can be an evaluation tool.

The data collection technique used is a quantitative method using *t-test* techniques and *tes*. *The* *t-test* and *n-yes* measurements were performed by each subject using the futsal shooting precision *t-test*. Then to determine the classification of each test item, you can see the score of the thing, which is then adjusted to the standards of each *test* item, then to determine the futsal accuracy rating can be seen as a whole by summing the *score*. Measuring instruments determine the accuracy of the data results. The data of this study was obtained using a regression test. Regression tests were carried out at three universities, namely UPGRIS, UNNES, and UNISSULA, to determine how many test scores were obtained for players according to the predetermined time.

By paying attention to the shape of the power test, the limb muscle power test instrument must also distinguish the type of *power* measured using a *box jump* measuring

device.

The limb muscle flexibility test instrument measures a single flexibility movement required by an appearance goal, using tice flexibility can be measured with a tool called *to sit and rich*.

The instrument of the confidence test using the Category of confidence questionnaire is if four belong to the excellent Category if three categories are good, if two types are sufficient, and if one class is naughty. The development of this instrument based on the theoretical framework that has been compiled is further developed in the indicators. The measurement was carried out at three different universities, namely women's futsal UKM PGRI Semarang University with 30 people, women's futsal UKM Semarang State University with 20 people, women's futsal UKMn Sultan Agung Islamic University Semarang with 20 people. Indicators have been used in confidence questionnaires grid to determine a person's confidence level in this study.

Data analysis used multiple linear regression to examine the relationship between free and bound variables and hypothesized with

chi-square test calculations. Prerequisite tests: validity test, reliability test, and multiple linear regression test.

FINDINGS AND DISCUSSION

1) A significant relationship exists between limb muscle *power* and shooting accuracy. 2) There is a significant relationship between the limb muscles' flexibility and shooting accuracy. 3) There is a significant relationship between confidence and *shooting* accuracy. 4) Partially obtained there is a significant relationship between limb muscle *power*, limb muscle flexibility, and confidence in *shooting* accuracy in futsal students of UPGRIS UKM, UNNES, and UNISULA.

Findings

The r significance test is basically to test whether all the (independent) variables included in the regression model simultaneously influence the bound (dependent) variables. This r-test is used to see if 3 independent variables on the model simultaneously affect the dependent variables. The following are the results of the simultaneous n test:

Table 1. Multiple Linear Regression Test *Muscle Power*, Limb Muscle Flexibility, and Confidence in Shooting Accuracy

University	Sig Power Muscle Limbs(X ₁)	Sig Flexibility of Limb Muscles(X ₂)	Sig Confident(X ₃)
UPGRIS	0,000	0,011	0,001
UNNES	0,008	0,016	0,004
UNISSULA	0,018	0,027	0,34

It is known that the Results of the Multiple Linear Regression Test using UPGRIS player data have a significance value of the effect of X_1 on Y is 0.000, so it can be concluded that H_1 is accepted, namely, X_1 affects Y .

It is known that the significance value of the influence of X_2 on Y is 0.011, so it can be concluded that H_2 is accepted, meaning that X_2 affects Y . It is known that the significance value of the influence of X_3 on Y is 0.001, so it can be concluded that H_3 is accepted, which means that X_3 affects Y . It is known that the Results of the Multiple Linear Regression Test using UNNES player data have a significance value of the effect of X_1 on Y is 0.008, so it can be concluded that H_1 is accepted. Namely, X_1 affects Y .

It is known that the significance value of the influence of X_2 on Y is 0.016, so it can be concluded that H_2 is accepted, meaning that X_2 has an effect on Y .

It is known that the significance value of the influence of X_3 on Y is 0.004, so it can be concluded that H_3 is accepted which means that X_3 affects Y .

It is known that the Results of the Multiple Linear Regression Test using UNISSULA player data have a significance value of the effect of X_1 on Y is 0.018, so it can be concluded that H_1 is accepted, namely, X_1 affects Y .

It is known that the significance value of the influence of X_2 on Y is 0.027, so it can be concluded that H_2 is accepted, meaning that X_2 affects Y .

It is known that the significance value of the influence of X_3 on Y is 0.034, so it can be concluded that H_3 is accepted which means that X_3 affects Y .

Discussion

Previous research by Paul, Doortje, and Frederik (2021). "The Effect of Shooting Training on Shooting Accuracy in Futsal Matches ."One of the basic techniques in football that has not been mastered is to shoot correctly and directly into the goal (Fataha et al., 2021). Therefore, researchers are interested in conducting research through training to improve essential direct *scoring (shooting) techniques*. From the results of the exercise provided by the researchers, it can be seen that the shooting accuracy of the students of SMK Negeri 1 Tondano increases when the *shooting* is right on target (Hadiana et al., 2020).

Skills in playing futsal, especially dribbling, are supported by good fitness from its players. *Power* muscle limbs are essential to increase strength in shooting the ball. *The* limb muscles' power requires the leg muscles' flexibility, considering that the shooting activity requires firing accuracy so that the ball enters the goal. *With* the limb muscles' strength and limb muscles' flexibility for shooting accuracy, players must be supported with good self-confidence. These three factors are jointly needed so that players can play futsal, especially in the accuracy of *shooting* the ball well.

The analysis of the contribution of *limb muscle power*, the flexibility of the leg muscles, and confidence in shooting accuracy obtained

significant results (Haryanto et al., 2021). This means that the ability of the leg muscles, the flexibility of the leg muscles, and confidence contribute significantly to the accuracy of *shooting* the ball. The amount of variable contribution of limb muscle *power*, limb muscle flexibility, and trust in *shooting* accuracy in UPGRIS players by 77.2%, UNNES players by 75.8%, and UNIS S ULA players by 61.8%.

Then the hypothesis test results, the contribution of limb *muscle power*, limb muscle flexibility, and confidence in kicks accurately with a UPGRIS significance value of 0.001, less than $\alpha = 0.05$, and a UNNES significance value. to 0.000, less than $\alpha = 0.05$, UNISSULA's significance value of 0.011 is less than $\alpha = 0.05$. That is, *foot power*, flexibility, leg muscles, and confidence contribute to the accuracy of a futsal player's ball shot. Strong leg muscles, the flexibility of leg muscles, and trust result in good shooting accuracy and vice versa.

Researchers concluded there was a significant contribution to leg muscle *power*, limb muscle flexibility, and confidence in *shooting* accuracy. Thus the strength of leg muscles, flexibility of the leg muscles, and confidence contribute positively to the accuracy of *shooting* the ball.

CONCLUSION

The conclusion of the study shows that there is a contribution between *the power* of the leg muscles, the flexibility of the limb muscles, and confidence in the accuracy of *shooting* the ball. *Limb muscle power*, the flexibility of leg

muscles, and better confidence will increase the accuracy of *hitting* the ball in the futsal game. The amount of variable contribution of leg muscle *power*, limb muscle flexibility, and trust in the accuracy of *ball shooting* in UPGRIS players is 77.2%, UNNES players are 75.8%, and UNIS S ULA players are 61.8%.

ACKNOWLEDGEMENTS

This research was able to be completed thanks to the help of various parties. Therefore, the researcher expressed the highest gratitude and appreciation to those who helped conduct this research. The researcher's gratitude was conveyed for the first time to the supervisors: Dr. Sulaiman, M.Pd as Supervisor I, and Dr. Mugiyo Hartono, M. Pd as Supervisor II. As well as a thank you to the UPGRIS Futsal Student Activity Unit (UKM), UNNES, and UNISSULA, who gave in to conduct research, thank you to parents and all students who participated.

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