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The Relationship between Leg Muscle Strength and Eye-Foot Coordination with Sepak Takraw Ability at the West Koya Sepak Takraw Club, Jayapura City in 2025

Yuli Kombong[1], Arie Favian Syahmar Marpaung[2], Muhamad Refki Yunus[3]

[1,2,3] Elementary School Teacher Education study program, Faculty of Teacher Training and Education, University of Papua, Manokwari, West Papua, 98312, Indonesia

Abstract
The Sepak Takraw West Koya Club's sepak sila ability is not yet optimal, this can be seen when playing on the field, they often fail to pass when the ball is played on the field, handling the ball with the inside of the foot is not right so that the ball played is not controlled and does not optimally channel the ball to the receiver and individual ball control or passing is still inconsistent. The objectives to be achieved in this study are to determine: The relationship between leg muscle strength and eye-foot coordination with sepak sila ability both partially and simultaneously. In this study, correlation research was used with a population of the Sepak Takraw West Koya Club totaling 21 people. The sampling technique used was the saturated sampling technique, where the population is the same as the sample size, namely 21 people. By using tests and measurements, Discussion (1) There is a relationship between X_1 and Y obtained r = 0.728 with sig (P) = 0.000 < 0.05 with a contribution of 52.9%, (2) There is a relationship between X_2 and Y obtained r = 0.702 with sig P = 0.000 < 0.05 with a contribution of 49.2%. (3) There is a relationship between X_1 and X_2 with Y which is 0.728, the correlation is significant and X_1 and X_2 together have a very large contribution to Y which is 66.2%, so it can be concluded that the stronger the leg muscle strength and ankle coordination, the better the ability to swing oneself.

Keywords: *leg muscle strength, eye-foot coordination, sila skills, sepak takraw*

Correspondence author: Yuli Kombong, Universitas Papua, Indonesia
Email: y.kombong@unipa.ac.id

INTRODUCTION

Sepak Takraw is one of the sports that consists of a combination or merger of three games, namely football, volleyball, and badminton. Sepak takraw is one of the sports that is a little unique when compared to other sports where what we know is the dominance of gymnastics and acrobatic movements as the basis of skills towards the maturity of achievement can be underlined, that without early age coaching it will be difficult to produce athletes who perform optimally. The sport of sepak takraw has been widely known and developed throughout Indonesian society which has been proven by the existence of sepak takraw clubs from various provinces in Indonesia that participate in national and international championships. In creating reliable players and improving good players, it takes hard practice and struggle from every player. The development of sepak takraw has spread nationally, regionally, and internationally, therefore sepak takraw is contested

and has become an official activity at the PON, SEA Games, and Asean games while at the Olympic level it is still in struggle".

Each sport has different characteristics, including in the sepak takraw sport which of course will require different handling, namely handling that is adjusted to the characteristics of the sport fostered. Coaching sepak takraw sports to be able to do the right way to train so that the goals of the training can succeed well. There are many factors that can affect the performance of sepak takraw players, including technical elements. The technique of the game will not take shape on its own without regular practice and to play well a player must master basic tactics and special techniques. The basic techniques of sepak takraw include kicking, head-playing, mendada, memaha, and shoulder to shoulder. Basic engineering skills between one and the other are an inseparable unit. Mastery of these techniques can be played well if learned and practiced continuously under the supervision of a qualified coach.

In addition to the basic techniques in the game of sepak takraw in question, a player must also master a special technique of playing sepak takraw which is a way of playing sepak takraw which includes sepak mula, receiving sepak mula, passing, smesh, and blocking. Without mastering these techniques, sepak takraw games are impossible to do well and perfectly. According to (Dian Wismayanti, 2021:2) it can be said that the ability to kick is the mother of the game of sepak takraw, because the ball played is mostly kicked with the inside foot, starting from the beginning of the game to scoring points or numbers are done with the feet (kicks)." Of the several types of kicks in the game of sepak takraw, the most important and main is the precept.

A precept kick is a kick that uses the inner foot. Football is a basic movement with various uses, one of which is to hold or receive serves, passing, giving the ball, and for serving for beginners." In doing the stake of the ethical questions, it is also necessary to tighten the leg muscles to get maximum results.

The strength of the leg muscles is the main thing in doing the precepts. Leg muscle strength is a very important component in improving overall physical condition. This is possible because the strength of the leg muscles is the driving force of every physical activity, besides it also plays an important role in protecting athletes from possible leg injuries. In mastering a sports skill such as football skills, several body skills are needed, one of which is coordination. Coordination is the ability of a person to integrate a variety of different movements into a single movement pattern effectively.

Ankle coordination in the game of sepak takraw has a very important role. This ability is needed to control and play the ball after a certain stimulus in the form of a ball that comes from the opponent's attack. With good ankle coordination, certain movements can be done with the aim of mastering and playing the ball.

Based on the results of the researcher's observations in the field, the sepak sila ability of the West Koya Sepak Takraw Club is not optimal, this can be seen when playing on the field, they often fail to provide passes when the ball is played on the field, ball control with the inside of the foot is not precise so that the ball played is not controlled and not optimal in distributing the ball to the ball receiver and individual ball control and passing the ball are still inconsistent. From several factors that influence the sepak sila sepak takraw ability and the problems that arise based on the results of observations in the field, the researcher is interested in conducting a study entitled "The Relationship between Leg Muscle Strength and Eye-Foot Coordination with Sepak sila sepak takraw Ability at the West Koya Sepak Takraw Club, Jayapura City in 2025".

METHOD

In this study, the type of research used is correlational research. According to (Azwar, 2010) correlational research aims to investigate the extent to which the variation of a variable is related to variables in one or more other variables, based on the correlation coefficient. Correlation research is research conducted by researchers to determine the level of relationship between two or more variables, without making changes, additions, or manipulation of existing data (Raka Pratama 2019: 15). The method used is a survey method with data collection in the form of tests and measurements (Yaskar et al., 2024). The purpose of this study was to see if there was a relationship between leg muscle strength and eye-foot coordination on sepak sila ability at the Koya Barat Sepak Takraw Club, Jayapura City. This research was conducted at the Koya Barat Sepak Takraw Club field on Jl. Paniai, Muara Tami District, West Koya on Monday, May 19, 2025 until completion. The population is all research subjects (Arikunto: 130).

Kusumawati 2015:93 states that population is the totality of research objects consisting of humans, animals, plants and objects that have similarities to be taken as research data. The population in this study is all players of the West Koya Sepak Takraw Club in Jayapura City in 2022 with a total of 21 players. The sample collection technique used in this study is a saturated sampling technique where all members of the population are used as samples, namely all men's

sepak takraw clubs totaling 21 people. The data collection technique for leg muscle strength tests uses a Leg Dynamometer using a tool, namely the Leg Dynamometer (Widiastuti, 2017), the eye-foot coordination test uses a soccer wall volley test which has a validity of 0.860 and a reliability of 0.871, and a 1-minute sepak sila test. The sepak sila test (playing the ball using the inside of the foot) the unit of measurement is how many subjects can do it in 1 minute. This test has a validity of 0.889 and a reliability of 0.733. To present descriptive statistical data using the SPSS version 24 program application.To present statistical descriptive data using the SPSS program application version 24.

RESULTS AND DISCUSSION

Result

The results of the descriptive analysis of data on leg muscle strength, ankle coordination, and precept football ability at the West Koya Sepak Takraw Club in Jayapura City in 2025 can be very valuable information, especially for the author to discuss the results of the research and for the purpose of drawing conclusions.

Table 1: Data Description

	N	Range	Min	Max	Sum	Mean	Std. Deviation
Leg muscle strength	21	28,5	28,5	57	984	46,857	7,15
Eye-Foot coordination	21	10	5	15	190	9,048	2, 94
Football ability	21	54	30	84	1157	55,095	13,88

Based on table 1, it can be stated that:

a. The overall leg muscle strength data is 984 kg, so it has an average of 46,857 kg, and the standard deviation is 7.15 kg. Judging from the distribution of the data, the minimum data is 28.5 kg while the maximum data is 57 kg so that the range/range is 28.5 kg.
b. The overall ankle coordination data was 190 times, so it had an average of 9.048 times, and the standard deviation was 2.94 times. Judging from the distribution of the data, the minimum data is 5 times while the maximum data is 15 times so that the range/range is 10 times.

c. The overall syllable data is 1157 times, so it has an average of 55.09 times and the standard deviation is 13.88 times. Judging from the distribution of the data, the minimum data is 30 times while the maximum data is 84 times so that the range/range is 54 times.

A research data that will be analyzed statistically must meet the conditions of analysis. For this reason, after the data on leg muscle strength, ankle coordination, and precept football ability at the West Koya Sepak Takraw Club in Jayapura City in 2025 in this study are collected, before statistical analysis is carried out for hypothesis testing, a requirement test is first carried out, namely normality with the kolmogorov smirnor test at a significant level of 5% or α = 0.05.

Table 2. Summary of normality test results

No.	Variable	Statistic	Sig.	Ket.
1.	Leg muscle strength	0,155	0,200	Normal
2.	Eye-Foot coordination	0,138	0,200	Normal
3.	Football ability	0,119	0,200	Normal

Based on the table above, it can be seen that the normality test of the data using the Kolmogorov Smirnov test shows the following results:

1. For the variable data of leg muscle strength, the value of sig = 0.200 (P = 0.200>0.05) means that this shows a significance value greater than 0.05, then the strength of the leg muscles follows a normal distribution or is normally distributed.
2. For variable data of ankle coordination, the value of sig = 0.200 (P = 0.200 > 0.05) means that this indicates a significance value greater than 0.05, then the ankle coordination follows a normal distribution or is normally distributed.
3. For the variable data of the ability of the precepts, the statistical value = 0.200 (P= 0.200 > 0.05) means that this shows a significance value greater than 0.05, then the precept ability follows the normal distribution or is distributed normally.

Testing of the variable linearity of leg muscle strength with ethical football ability was carried out to find out whether the strength of leg muscles and ethical football ability has a significant liner relationship or not. The results of the variable linearity test can be seen in the following table:

Table 3 results of the linearity test

Variable	F_{hitung}	P	A	Ket.
Leg muscle strength with the ability to kick the precepts	2,562	0,188	0,05	Linier
Coordination of the ankles of the ability of the precepts	1,283	0,342	0,05	Linier

Based on the table above, it can be seen that the results of the linearity test of the variable of leg muscle strength with the ability of the precept of precepts were obtained with a fcal value of 2.562 and a linearity value of 0.188, because the linearity value of the data is greater than 0.05 (0.188 > 0.05) then it can be concluded that the strength of the leg muscles and the ability of precepts to have a linear relationship. The variable of ankle coordination with the ability of the precept with Fcal was 1.283 and the linearity value was 0.342, because the linearity value of the data was greater than 0.05 (0.342>0.05), it can be concluded that the coordination of the ankles with the ability of the precept is also a linear relationship.

The correlation coefficient shows the relationship between the independent variable (leg muscle strength and ankle coordination) and the dependent variable (self-discipline ability). The calculation of the Pearson correlation for the analyzed variable must be done, because basically for analysis with regression, the size of the correlation must first be checked. Based on the results of the regression analysis test, the Pearson correlation values between variables were obtained, among others, as follows.

Table 5. Correlation Test Results

Variable	Football ability		Ket
	r	sig	
Leg muscle strength	0,728	0,000	There is a relationship
Eye-Foot Coordination	0,702	0,000	There is a relationship

The results of the hypothesis test obtained a value of r = 0.728 with sig (P) = 0.000, where p 0.000 < 0.05. So in this study, it can be concluded that there is a significant relationship between leg muscle strength test and precept football ability at the West Koya Sepak Takraw Club, Jayapura City in 2025. In addition, the value of the determination coefficient (R^2) = 0.529 was obtained.

This R^2 value shows that the contribution of leg muscle strength to the ability to swing is 52.9%. Therefore, the ability to play the game of precepts 47.1% is influenced by other factors.

The results of the hypothesis test obtained a value of r = 0.702 with sig (P) = 0.000, where p 0.000 < 0.05. So in this study, it can be concluded that there is a significant relationship between the ankle coordination test and the ability to play precepts at the West Koya Sepak Takraw Club, Jayapura City in 2025. In addition, the value of the determination coefficient (R^2) = 0.492 was obtained. This R^2 value shows that the contribution of ankle coordination with the ability to stomp is 49.2%. The results of the hypothesis test obtained a value of R = 0.814 and followed by the F test obtained F = 17.620 and (p = 0.000 < α 0.05), meaning that there is a significant relationship together between leg muscle strength and ankle coordination with the ability to kick precepts at the West Koya Sepak Takraw Club, Jayapura City in 2025.

The R2 value of 0.662 shows that the contribution of leg muscle strength and ankle coordination with the ability of the discipline is 66.2%, while the ability of the discipline of 33.8% is influenced by other factors. The value of R square means that, every time there is a change in the value of leg muscle strength and ankle coordination, it is always followed by a change in the ability to stomp the self.

Discussion

Based on the results of the hypothesis testing that has been carried out, it shows that the hypothesis is refuted, namely that there is a significant relationship between leg muscle strength and foot-eye coordination with the ability to kick sila in sepak takraw (Riesmayana Dhika 2020). The results of data analysis and correlation values between leg muscle strength with foot-eye coordination and foot-eye ability are 0.814. Based on the correlation test, a significant contribution of leg muscle strength and foot-eye coordination to the ability to kick sila was obtained by 66.2% so that the results of data analysis through statistics require a standard theoretical discussion regarding the theory and theoretical study of this research. Many factors influence the ability to kick sila in sepak takraw including leg muscle strength, foot-eye coordination, balance, flexibility, and so on, but in this study it was proven that leg muscle strength and foot-eye coordination have a significant relationship both partially and simultaneously to the ability to kick sila.

CONCLUSION

In this study, it can be concluded that there is a significant relationship between leg muscle strength and eye-foot coordination on sepak sila ability in sepak takraw games at the West Koya Sepak Takraw Club, Jayapura City in 2025 with a correlation coefficient of 0.814 and a sig value of 0.000 <0.05. The contribution of leg muscle strength and eye-foot coordination to sepak sila technique ability is very large, which is 66.2%, and 33.8% is influenced by other factors.

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