Journal of Sport Education, Coaching, and Health (JOCCA)
ISSN (E): 2797-4197 ‖ ISSN (P): 2797-3565
Volume 5 Number 1, Year 2024 ‖ pp.79-84
Email: journal.jocca@gmail.com ‖ Website: http://sainsglobal.com/jk

The Relationship Between Leg Length and Leg Strength and Ability to Kick the Ball in Football Games

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Authors' contribution:
A. Conception and design of the study; **B.** Acquisition of data; **C.** Analysis and interpretation of data; **D.** Manuscript preparation; **E.** Obtaining funding

Received: 2024-03-12 **Accepted**: 2024-03-19 **Published**: 2024-03-21

ABSTRACT

This study aims to determine the relationship between leg length and leg strength with the ability to kick the ball in a football game. This research is a type of correlational descriptive research. The population of this study is all students of SMP Negeri 24 Makassar with a research sample of 100 male students selected by proportional random sampling. The data analysis techniques used are simple and multiple correlation analysis techniques. Based on the results of data analysis, this study concludes that: There is a significant relationship between leg length and the ability to kick the ball in a football game, (ro = 0.508 > rt = 0.220); There was a significant relationship between leg strength and the ability to kick the ball in a football game, (ro=0.693 > rt=0.195); There was a significant relationship between leg length and leg strength with the ability to kick the ball in a football game (Ro = 0.708 > Rt = 0.195).

Keywords : Leg Length; Leg Strength; Kicking the Ball; Football.

INTRODUCTION

Sports coaching for now is directed at achieving the highest achievements. To raise the dignity and dignity of the proud image of a region (Yudistira et al., 2018). In this case, this increase in achievement cannot be separated from the role of various sciences. Sports are indeed complex in their problems, as is the case with the game of football (Syamsudar & Firmansyah, 2019). One of the most popular sports, so that every individual or fan becomes a fanatic (football maniac) (Muhammad Khoirul Huda et al., 2021). This madness or fanaticism arises as a result of games that show beautiful techniques with a system of patterns that are demonstrated (Setiawan, 2019). Inseparable from that, to achieve optimal results, it is necessary to encourage early coaching (Akabar et al., 2020). To be embedded in him in automation about the sport he plays such as in a football game (Burhanuddin et al., 2022). Early coaching is a positive thing to achieve optimal results, in this case, elementary school is a place or forum for sports development (Nugroho & Rohadi, 2020), children can show very innocent things to be directed at this age they usually use more for playtime (Hammado et al., 2020).

The game of football has several basic techniques, both without the ball and by using the ball (Misbahuddin et al., 2020). Of the many techniques that exist in the game of football, kicking is something that needs to be considered (Pieter Pelamonia & Putra Hutapea, 2020). Kicking is an attempt by a person to deliver the ball to its destination or the movement of the ball (Sudirman, 2022). Kicking the ball in a football game is a technique that is often used by players (Hulfian, 2021), therefore in the game of football, kicking should not be underestimated, because it can flow the attack as soon as possible from the defensive area to the attacking area on the opponent's side (Akhmad & Suriatno, 2018), not only that the purpose of kicking the ball is to feed the ball to a friend and put the ball in the goal (Isaac et al., 2023). To get the maximum distance of the ball kick, it needs the support of coordinated movements so that it reveals a single correct ball kick movement (Aini, 2017). In order to achieve the coordination of these movements, it is necessary to have regular, planned, and intensive training so that it will give birth to a skilled form of movement with the correct kicking techniques (Komarudin, 2021). The coordination of movements expected in kicking the ball far is the beginning, the position of the footrest, the kicking foot, the contact of the foot on the ball, body movements, hand and eye movements (Putra, 2021). The analysis can be explained that in doing a long kick some things or factors need to be supported such as leg strength and leg length. These two factors play a very important role in getting the ability to kick the ball in a football game.

Leg strength is the ability of the leg muscles to be able to use force to withstand a load, or the ability of the leg muscles to contract by using maximum force. From this understanding, it can be explained that to get the ability to kick the ball in a football game, the strength of the legs plays a very important role, if it is not supported by the ability to kick, then the results obtained are less. In addition, the length of the legs can affect the ability to kick the ball in a football game, in this case, a person who has a type of long leg will have a wider angle of movement when compared to a person who has a short legs, in doing sports activities the angle of movement owned or done will be smaller. Considering the magnitude of the force released is smaller compared to people who have long legs.

METHODS

The method used in this study is descriptive. The research variables to be studied in this study consist of the independent variable consists of leg length and leg strength, while the bound variable is kicking the ball. The research design or research design used in this study is descriptive correlational. The population in this study is all students of SMP Negeri 24 Makassar. The sample taken or used in this study amounted to 100 people from grade VIII male students of SMP Negeri 24 Makassar with a proportional random sampling technique. The data collected in this study includes leg length measurements, leg strength tests and football game kicking tests.

RESULTS AND DISCUSSION

Result

Descriptive data

The descriptive analysis of the research data consisting of the value of measuring the length of the legs, the leg strength test, and the ability to kick the ball in a football game can be seen in the summary of the results of the descriptive analysis listed in Table 1.

Table 1.
Results of descriptive analysis of data

Hypothesis Statistics	Leg length	Leg Strength	Kicking the Ball Football
N	100	100	100
$\sum X$	6624	8021	1240,23
$\sum X2$	440936	656539	16987,17
X	66,24	80,21	12,40
Sd	11,422	5,5841	4,0287

Requirements testing analysis

Research data to be analyzed statistically must meet the requirements for analysis. For this reason, after the data on leg length, leg strength, and ability to kick the ball in the football game in this study were collected, before conducting statistical analysis for hypothesis testing, a requirement test was first carried out, namely normality with a chi-squared test at a significant level of 95%. The results of the Chi-Quadratic (χ^2) test were carried out, the results were obtained as attached. The calculation results can be seen in the following summary table:

Table 2.
Data normality test results

It	Variable	χ^{20}	χ^{2t}	Information
1	Leg length	4,5798	11,070	Usual
2	Leg strength	5,5714	11,070	Usual
3	Kicking the ball	6,2857	11,070	Usual

Based on the table, which is a summary of the results of the data normality test on each research variable, it can be described as follows:

a. In the normality test of leg length data, the observed chi-square value (χ^2) = 4.5798 was smaller than the chi-square value of table (χ^2) at a significant level of 5% = 11.070. Thus, the leg length data obtained is normally distributed.
b. In the normality test of the leg strength data, the observed chi-square value (χ^2) = 5.5714 was smaller than the chi-square value of table (χ^2) at the significant level of 5% = 11.070. Thus, the leg strength data obtained is normally distributed.
c. In the normality test of the data on the ability to kick the ball in a football game, the observed chi-square value (χ^2) = 6.2857 was smaller than the chi-square value of table (χ^2) at a significant level of 5% = 11.070. Thus, the data on the ability to kick the ball in the football game is normally distributed.

Correlation analysis

The correlation analysis used was a single correlation analysis (R) and a double correlation of three predictors (R) at a significant level of 95%. The results of the complete correlation analysis can be seen in the following table:

Table 3.
Results of correlation analysis

Hypothesis	N	r0	rt	Information
- Correlation of leg length with the ability to kick the ball in a football game	100	0,508	0,195	Significant
- Correlation of leg strength with the ability to kick the ball in a football game	100	0,693	0,195	Significant
- Correlation of leg length and leg strength with the ability to kick the ball in a football game	100	0,708	0,195	Significant

Hypothesis testing

There is a relationship between the length of the legs and the ability to kick the ball in the football game of SMP Negeri 24 Makassar students.

Based on the results of the test analysis of the correlation of leg length data with the ability to kick the ball in a football game. It was obtained that the observation correlation value (r0) = 0.508 was greater than the table correlation value (rt) at a significant level of 5% = 0.195. means that Ho is rejected and H1 is accepted. Thus there is a significant relationship between the length of the leg and the ability to kick the ball in the football game of SMP Negeri 24 Makassar students.

There is a relationship between the strength of the legs and the ability to kick the ball in the football game of SMP Negeri 24 Makassar students.

Based on the results of the test analysis of the correlation of leg strength data with the ability to kick the ball in a football game. It was obtained that the observation correlation value (r0) = 0.693 was greater than the table correlation value (rt) at a significant level of 5% = 0.195. means that Ho is rejected and H1 is accepted. Thus there is a significant relationship between leg strength and the ability to kick the ball in the football game of SMP Negeri 24 Makassar students.

There is a relationship between the length of the legs and the strength of the legs with the ability to kick the ball in the football game of SMP Negeri 24 Makassar students.

Based on the results of the test analysis, the correlation of leg length and leg strength data with the ability to kick the ball in a football game. It was obtained that the observation correlation value (r0) = 0.708 was greater than the table correlation value (rt) at a significant level of 5% = 0.195. means that Ho is rejected and H1 is accepted. Thus, there is a significant relationship between the length of the legs and the strength of the legs with the ability to kick the ball in the football game of SMP Negeri 24 Makassar students.

Discussion

The first hypothesis; there was a significant relationship between the length of the legs and the ability to kick the ball in the football game of SMP Negeri 24 Makassar students. It is evident from the results of the analysis that the observation correlation value is greater than the correlation value of the table. This proves that a football player must have long legs. In doing a kick in a football game, the legs must have a wide range of room for movement. The angle of the joints is for players who have longer legs that are wider so that their movements are faster. Therefore, in kicking the ball in a football game, the length of the legs must be supported, as well as other basic techniques.

The second hypothesis; there was a significant relationship between leg strength and the ability to kick the ball in the football game of SMP Negeri 24 Makassar students. It is evident from the results of the analysis that the observation correlation value is greater than the correlation value of the table. This proves that to achieve maximum distance in making kicks in a football game, leg strength is indispensable for every player. Therefore, every football player needs a physical element, especially in the legs as a driving force in making kicks in football games.

The third hypothesis; There was a significant relationship between leg length and leg strength and the ability to kick the ball in the football game of SMP Negeri 24 Makassar students. It is evident from the results of the analysis that the observation correlation value

is greater than the correlation value of the table. This proves that the strength of the legs and the length of the legs are factors that support the kicking technique in the game of football. The legs are the main movers who make the kick, for players who have strong and long legs means they will have good ball-kicking ability.

CONCLUSION

After discussing the relationship between leg length and leg strength and the ability to kick the ball in the football game of SMP Negeri 24 Makassar students, the following conclusions were drawn:

1. There is a significant relationship between the length of the legs and the ability to kick the ball in the football game of SMP Negeri 24 Makassar students.
2. There is a significant relationship between leg strength and the ability to kick the ball in the football game of SMP Negeri 24 Makassar students.
3. There is a significant relationship between leg length and leg strength and the ability to kick the ball in the football game of SMP Negeri 24 Makassar students.

REFERENCES

Aini, M. (2017). Perbedaan pengaruh zig zag run dan side jump sprint terhadap peningkatan kecepatan tendangan pemain sepak bola usia 13-14 tahun. *Naskah Publikasi, Program Studi Fisioterapi, Fakultas Ilmu Kesehatan, Universitas Aisyiyah, Yogyakarta*, 1–16. http://digilib.unisayogya.ac.id/2875/

Akabar, A., Dehasen Bengkulu Corresponding Author, U., Meranti Raya Nomor, J., Lebar, S., & Bengkulu, K. (2020). Meningkatkan hasil belajar teknik passing kaki bagian dalam pada permainan sepakbola melalui metode bermain berpasangan pada siswa Kelas VII SMP Negeri 14 Bengkulu Tengah. *Educative Sportive-EduSport*, *2020*(2), 52–55. https://doi.org/https://doi.org/10.33258/edusport.v1i02.1237

Akhmad, N., & Suriatno, A. (2018). Analisis Keterampilan Dasar Sepakbola Pemain Klub Bima Sakti. *JUPE, Jurnal Pendidikan Mandala*, *3*(3), 10–27. http://ejournal.mandalanursa.org/index.php/JUPE/article/view/517

Burhanuddin, S., Syahruddin, S., Sahabuddin, S., & Majang, M. (2022). Pendekatan Saitifik Model Pembelajaran Kooperatif Untuk Meningkatkan Hasil Belajar Menggiring Bola. *Jambura Journal of Sports Coaching*, *4*(2), 88–102. https://doi.org/10.37311/jjsc.v4i2.15499

Hammado, N., Sahabuddin, Mahyuddin, R., & Jalil, R. R. (2020). Emotional Aspects and Dribbling Motor Skills in Football Players. *Atlantis Press, 3rd International Conference on Education, Science, and Technology (ICEST 2019)*, *481*(Icest 2019), 268–273. https://doi.org/10.2991/assehr.k.201027.056

Hulfian, L. (2021). Pass Through Traffic Training Dapat Meningkatkan Kemampuan Passing Dalam Permainan Sepakbola. *Cendekia: Jurnal Ilmu Pengetahuan*, *1*(3), 2007–2011. https://doi.org/https://doi.org/10.51878/cendekia.v1i3.528

Ishak, M., Sahabuddin, & Husniati. (2023). The Effect of Paired and Unpaired Ball Passing Practice on Ball Passing Ability in the Game of Football. *Nusantara Journal Of Sport Science*, *2*(1), 8–15. https://journal.apskori-sanjoss.org/index.php/njss/article/view/21

Komarudin, K. (2021). Latihan plyometric dalam sepakbola untuk anak usia muda. *Sepakbola*, *1*(1), 67–77. http://ejournal.ressi.id/index.php/sepakbola/article/view/101

Misbahuddin, M. H., Negeri, U., Universitas, M. E. W., Malang, N., & Lange, V. (2020). *Studi*

Kemampuan Teknik Dasar Sepakbola Pemain SSB Unibraw 82 Kota Malang Kelompok Usia 15-16 Tahun. *2*(4), 215–223.

Muhammad Khoirul Huda, Nuruddin Priya Budi Santoso, & Agustanico Dwi Muryadi. (2021). Perbedaan Pengaruh Latihan Passing Menggunakan Target Dan Latihan Passing Berpasangan Terhadap Kemampuan Passing Pada Sekolah Sepak Bola (Ssb) Putra Mojosongo Club Tahun 2020. *JURNAL ILMIAH PENJAS (Penelitian, Pendidikan dan Pengajaran)*, *7*(2), 24–34. https://doi.org/10.36728/jip.v7i2.1641

Nugroho, T., & Rohadi, M. (2020). Pengaruh Latihan Passing Berpasangan dan Kontrol Terhadap Kemampuan Passing Bawah Siswa Sekolah Sepakbola Generasi Muda Kutai Kartanegara Usia 10-12 Tahun. *Cendikia (Jurnal Pendidikan dan Pengajaran) IKIP PGRI Kalimantan Timur*, *4*(2), 170–188. https://cendikia.ikippgrikaltim.ac.id/index.php/cendikia/article/view/90

Pieter Pelamonia, S., & Putra Hutapea, A. (2020). Pengaruh Latihan Passing 5, 10, 15 Meter Terhadap Ketepatan Passing Sepakbola. *Jurnal Porkes*, *3*(2), 103–109. https://doi.org/10.29408/porkes.v3i2.2962

Putra, D. S. (2021). Exercise barrier hops on sand to improve ability shooting long ball soccer player. *Prosiding Seminar Nasional Pendidikan Jasmanin dan Kesehatan*, *1*(1), 41–50. http://ejournal.fkip.unsri.ac.id/index.php/semnaspenjas/article/view/185

Setiawan, D. (2019). Pengaruh Latihan Passing Berpasangan dan Dengan Media Dinding Terhadap Ketepatan Passing Sepakbola Pada SSB Bina Putra Usia 10-12 Tahun Di Kabupaten Blora Tahun 2019. *Skripsi, Pendidikan Kepelatihan Olahraga, Fakultas Ilmu Keolahragaan, UNiversitas Negeri Semarang*, 2016. https://lib.unnes.ac.id/37766/1/6301415007_Optimized.pdf

Sudirman. (2022). Paired and Unpaired Passing Practice Against the Ability of Passing the Ball in Football Games. *COMPETITOR : Jurnal Pendidikan Kepelatihan Olahraga*, *14*(1), 149–158. https://doi.org/doi.org/10.26858/cjpko.v14i1.32526

Syamsudar, B., & Firmansyah, R. E. (2019). Pengaruh Modifikasi Permainan Terhadap Passing Sepak Bola Dalam Ekstrakurikuler Di SD Negeri Caibarengkok. *Journal of Chemical Information and Modeling*, *1*(1), 1689–1699. Pengaruh Modifikasi Permainan Terhadap Passing Sepak Bola Dalam Ekstrakurikuler Di SD Negeri Cibarengkok

Yudistira, R., Mudian, D., & Risyanto, A. (2018). Pengaruh Latihan Passing Berpasangan dan Pendekatan Taktik Terhadap Kemampuan Passing Bawah Siswa Sekolah Sepakbola Persetan FC Usia 10-12 Tahun Desa Citra Jaya Kecamatan Binong. *Biormatika*, *4*(2), 2461–3961. http://ejournal.unsub.ac.id/index.php/FKIP/article/view/301