Journal Physical Health Recreation (JPHR)
Volume 5 Nomor 1 ; November 2024
https://jurnal.stokbinaguna.ac.id/index.php/JP
e-ISSN : 2747- 013X

Analisis Komponen Fisik Terhadap Kemampuan Passing Bawah Bola Voli Siswa SMPN 24 Makassar

Analysis Of Physical Components On The Ability Of Underwear Passing In Volleyball Of SMPN 24 Makassar Students

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Abstrak. Penelitian ini bertujuan untuk membuktikan: 1) Hubungan koordinasi mata tangan terhadap kemampuan passing bawah bola voli, 2) Hubungan kekuatan otot lengan terhadap kemampuan passing bawah bola voli, 3) Hubungan keseimbangan terhadap kemampuan passing bawah bola voli 4) Hubungan koordinasi mata tangan, kekuatan otot lengan dan keseimbangan terhadap kemampuan passing bawah bola voli. Metode penelitian yang digunakan adalah metode penelitian kuantitatif dan jenis penelitian ini adalah penelitian korelasional dengan melibatkan 3 variabel bebas yaitu koordinasi mata tangan, kekuatan otot lengan dan keseimbangan, sedangkan variabel terikat yaitu kemampuan passing bawah bola voli. Populasi dalam penelitian ini adalah siswa SMPN 24 Makassar, dengan sampel 30 orang yang diambil secara simple random sampling. Teknik analisis data yang digunakan adalah koefisien korelasi. Hasil penelitian yang dilakukan menunjukan bahwa: 1) Terdapat hubungan yang signifikan koordinasi mata tangan terhadap kemampuan passing bawah bola voli dengan nilai r = 0,778 (p<α0,05). 2) Terdapat hubungan yang signifikan kekuatan otot lengan terhadap kemampuan passing bawah bola voli dengan nilai r = 0,709 (p<α0,05). 3) Terdapat hubungan yang signifikan keseimbangan terhadap kemampuan passing bawah bola voli dengan nilai r = 0,694 (p<α0,05). 4) Terdapat hubungan yang signifikan koordinasi mata tangan, kekuatan otot lengan dan keseimbangan secara bersama-sama terhadap kemampuan passing bawah bola voli sebesar 84,40% dengan nilai R = 0,844 (p<α0,05).

Kata Kunci: koordinasi mata tangan, kekuatan otot lengan, keseimbangan, passing bawah permainan bola voli

1 Introduction

Sport is a systematic process in the form of all activities or efforts that can encourage the development and fostering of physical and spiritual potentials of a person or member of society in the form of games. Sport or a series of regular and planned physical movements to maintain movement (maintain life) and improve movement ability (improve quality of life). Sport is a tool to stimulate physical, spiritual and social growth and development (Enik Yuliantin, 2011:11).

According to Husdarta, (2015: 18), Physical education is an important part of the educational process, meaning that physical education is not just a decoration or ornament attached to the school program as a tool to keep children busy, but physical education is an important part of education through physical education children will develop skills that are useful for activities that are conducive to developing a healthy life, developing socially, and contributing to their physical and mental health. In general, physical education is an integrated part of the educational process in all fields and the targets sought are physical, mental, emotional, and social development for healthy citizens, through efficient physical activity media, improving the quality of their work (performance), their learning abilities and their health.

In volleyball, there are several basic techniques that must be mastered by a player in order to play volleyball well. The basic techniques of volleyball include: service, underhand pass, overhand pass, smash, block, and defense. One of the basic techniques that is quite important in volleyball is the underhand pass technique, this is because this technique is the beginning of the formation of an attack or the basis for carrying out an attack/smash.

Given the importance of mastering the underhand pass technique in volleyball, players are required to master this technique well. To be able to master the underhand pass technique well, in addition to doing routine training, one thing that is also important for a volleyball player to have is good physical components. Without the support of adequate physical components, the underhand pass movement technique cannot be done perfectly. Some physical components that can support effective underhand pass ability are eye-hand coordination, arm length and balance.

Likewise in physical education learning, mastery of passing. both underhand passing and overhand passing must be mastered by a student. Because it will determine how students play in volleyball, because good pass reception is the beginning of a successful smash and if the pass is good then the game will run well too.

Winarno (2013: 77). Passing is passing or passing the ball to a teammate. The success of a smash depends on a player's passing, the path and rotation of the ball, and placing the ball in an empty space for the opposing player. However, it is undeniable that in volleyball learning students often have difficulty in doing underhand passing, because students do not understand the relationship between eye-hand coordination, arm muscle strength and balance to underhand passing ability in volleyball. For example, when I was conducting the learning process at SMPN 24 Makassar, I found many students who did not really understand the game of

volleyball, especially underhand passing, and there were several students who did underhand passing less well, this was influenced by the contact between the ball and the hand not being right.

Therefore, I am interested in researching From the description above, the author is interested in researching "The relationship between eye-hand coordination, arm muscle strength and balance towards underarm passing in volleyball games in students of SMPN 24 Makassar".

2 Method

to influence these variables so that there is no manipulation of variables. This study aims to determine the contribution of eye-hand coordination, arm muscle strength and balance to the ability to pass under the volleyball.

1. Research Place

This research was conducted at SMPN 24 Makassar

2. Research Variables

The research variables used in this study include:

a. Independent variables

1) hand-eye coordination
2) arm muscle strength
3) balance

b. Dependent variables:

1) volleyball underhand passing ability

1) Population

According to Sugiyono (2013:80) "population is a general area consisting of objects/subjects that have certain qualities and characteristics determined by researchers to be studied and then conclusions drawn". So based on the understanding above, the population used in this study is all students of SMPN 24 Makassar.

2) Sample

A sample is part of a population selected according to certain rules, and must describe the nature or characteristics of the entire population. Bidiwanto (2017; 160). A sample is part of a population taken using certain techniques needed to determine the number of samples using random sampling techniques. The number of samples in this study was 30 students of SMPN 24 Makassar.

After all the research data has been collected, the next step is to analyze the data. This allows researchers to draw conclusions about the data through analysis. Computer-assisted statistics using the SPSS version 21 program to determine whether there is a relationship between the independent variables and the dependent variables. The results of the volleyball underhand passing ability and three independent variables, namely hand-eye coordination, arm muscle strength and balance.

3 Results

Based on the results of research conducted on students of SMPN 24 Makassar. The results of the statistical analysis related to the scores of hand-eye coordination, arm muscle strength and balance on the volleyball underhand passing ability of students of SMPN 24 Makassar are presented in the following table:

Table 1. Summary of results of descriptive analysis of data

Statistik	hand eye coordination (X1)	arm muscle strength (X2)	balance (X3)	volleyball underhand pass (Y)
N	30	30	30	30
Mean	15.63	14.57	36.73	11.60
Median	16.00	14.50	37.00	12.00
Std. Deviation	1.377	1.794	2.434	1.404
Variance	1.895	3.220	5.926	1.972
Range	5	7	10	5
Minimum	13	11	32	9
Maximum	18	18	42	14
Sum	469	437	1102	348

Data Normality Test

1. In testing the normality of hand eye coordination data, the values obtained were KS-Z = 0.788 and P = 0.115 which was greater than α = 0.05. Thus, the hand eye coordination data obtained is normally distributed.
2. In testing the normality of arm muscle strength data, the values obtained were KS-Z = 0.755 and P = 0.151 which was greater than α = 0.05. Thus, the arm muscle strength data obtained is normally distributed.
3. In testing the normality of balance data, the values obtained were KS-Z = 0.674 and P = 0.200 which was greater than α = 0.05. Thus, the balance data obtained is normally distributed.
4. In testing the normality of underhand pass data, the values obtained were KS-Z = 0.797 and P = 0.106 which was greater than α = 0.05. Thus, the underhand pass data obtained is normally distributed.

Correlation Analysis

After carrying out data normality tests on the hypothesis to be tested, the hypothesis is tested to prove its correctness.

Table 2. The first hypothesis, hand eye coordination on volleyball underhand pass

Correlation	N	r	P_{value}	Description

X_1. Y	30	0,778	0,000	Significant

Based on the results of the correlation analysis of hand-eye coordination data on underhand passing ability in volleyball, the correlation value (r) = 0.778 was obtained, with a probability level (P) = 0.000 smaller than α = 0.05. then HO is rejected and H1 is accepted (significant correlation coefficient), or hand-eye coordination has a significant relationship with underhand passing ability in volleyball. Thus, it can be concluded that there is a relationship between hand-eye coordination and underhand passing ability in volleyball.

Table 3. The second hypothesis, arm muscle strength on volleyball underhand pass

Correlation	N	r	P_{value}	Description
X_2. Y	30	0,709	0,000	Significant

Based on the results of the correlation analysis of arm muscle strength data (X2) on the ability to pass underfoot in volleyball, the correlation value (r) = 0.709 was obtained, with a probability level (P) = 0.000 smaller than α = 0.05. So HO is rejected and H1 is accepted (significant correlation coefficient), or arm muscle strength has a significant relationship to the ability to pass underfoot in volleyball. Thus, it can be concluded that there is a significant relationship between arm muscle strength and the ability to pass underfoot in volleyball.

Table 4. The third hypothesis, balance on volleyball underhand pass

Correlation	N	r	P_{value}	Description
X_3. Y	30	0,694	0,000	Significant

Based on the results of the correlation analysis of balance data (X3) on the ability to pass underfoot in volleyball, the correlation value (r) = 0.694 was obtained, with a probability level (P) = 0.000 which is smaller than α = 0.05. So HO is rejected and H1 is accepted (significant correlation coefficient), or balance has a significant relationship to the ability to pass underfoot in volleyball. Thus, it can be concluded that there is a significant relationship between balance and the ability to pass underfoot in volleyball.

Table 5. The fourth hypothesis is that there is a relationship between hand-eye coordination, arm muscle strength and balance with underhand passing ability in volleyball.

Correlation	N	R	R^2	P_{value}	Description

$X_1.X_2.X_3.$ Y	30	0,844	0,778	0,000	Significant

Based on the results of the correlation analysis of hand-eye coordination data, arm muscle strength and balance on the ability to pass under the volleyball of SMPN 24 Makassar students, the correlation value (r) = 0.844 was obtained, with a probability level (P) = 0.000 which is smaller than α = 0.05. So HO is rejected and H1 is accepted (significant correlation coefficient), or the relationship between hand-eye coordination, arm muscle strength and balance has a very significant effect on the ability to pass under the volleyball of SMPN 24 Makassar students. Thus, it can be concluded that there is a significant relationship between hand-eye coordination, arm muscle strength and balance on the ability to pass under the volleyball of SMPN 24 Makassar students.

4 Discussion

1. The relationship between eye and hand coordination and underhand passing ability in volleyball

From the results of the hypothesis testing, it shows that there is a significant relationship between hand-eye coordination (X1) and underhand passing ability (Y). Based on the calculation results, the correlation coefficient value (r) = 0.778 was obtained.

Coordination is a person's ability to combine various movements into one in one unit of time with movements that are in harmony and in accordance with the goal, meaning the goal of doing underhand passing correctly into the target value that has been determined. There is a contribution between hand-eye coordination and underhand passing ability because hand-eye coordination is very much needed in doing underhand passing strokes. Hand-eye coordination in doing underhand passing strokes, especially when doing the movement of hitting the ball.

So hand-eye coordination is very much needed in doing underhand passing strokes, because hand-eye coordination is very much needed by players in directing an object towards the target to be achieved, so that with good hand-eye coordination, the percentage of success in doing underhand passing will be higher. With good coordination, an object that is thrown will successfully reach the target.

2. The relationship between arm muscle strength and underarm passing ability in volleyball

From the results of the hypothesis test, it shows that there is a significant relationship between arm muscle strength (X2) and the ability to pass underarm (Y). Based on the calculation results, the correlation coefficient value (r) = 0.709 is obtained.

Arm muscle strength is a person's ability to withstand a load maximally. Muscle strength is the ability of a muscle or group of muscles to perform one contraction maximally to withstand resistance or load. Regular, structured and

continuous training will be able to produce changes in the structure of the trained muscles which will increase the ability of muscle contraction. Strength is the driving force of every physical activity, especially in performing underarm passes in volleyball.

So arm muscle strength on underarm passing ability provides an influence and advantage in performing underarm passes. The role of arm muscle strength in performing underarm passes is to produce underarm passes so that the ball can bounce up maximally as desired in volleyball. So it can be concluded that arm muscle strength is very important in underarm passing ability, the stronger a person's arm muscle strength, the stronger it is given when performing underarm passes.

3. The relationship between balance and underhand passing ability in volleyball

The results of the hypothesis testing show that there is a significant relationship between balance (X3) and the ability to pass underfoot (Y). Based on the calculation results, the correlation coefficient value (r) = 0.694 was obtained.

Balance is a person's ability to maintain body balance so that it remains balanced. In volleyball, the balance component is needed when performing technical and tactical movements of players when passing. The reason balance is so important when passing is because the ball that will be passed is not necessarily directed at the volleyball athlete. Therefore, trained balance is needed to move flexibly when reaching for the ball and passing underfoot to teammates.

Irawadi (2011:27) states that balance is the ability to maintain the correct posture and body position when standing (static balance). According to Sidik (2010:19) balance is a person's skill in maintaining the body system both in static and dynamic positions, balance is also very important in performing a movement because with good balance, the movement that is done will achieve perfection.

4. The relationship between hand-eye coordination, arm muscle strength and balance with underhand passing ability in volleyball.

The results of the hypothesis test show that there is a significant relationship between hand-eye coordination (X1), arm muscle strength (X2), and balance (X3) on the ability to pass underarm (Y). Based on the calculation results, the correlation coefficient value (r) = 0.844 was obtained.

Passing in volleyball is a technique of playing the ball carried out by a player with one or two hands with the aim of directing the ball to a place or teammate to be played again. Passing underarm is an important element in volleyball. Mastery of good passing underarm techniques will determine the success of the team to help a good attack.

Ahmadi (2017: 36) states that passing underarm is the beginning of the first attack because it is used to receive service. Underarm passing training with many variations is needed by athletes. Varied underarm passing training models can enrich the movements of beginner athletes. Underarm passing is the first element for team defense. If the ball that comes is too hard and difficult to play with an overarm pass,

then it must be played with an underarm pass. In addition to defense, underarm passing also plays a very important role in building attacks. Underarm passing can function the same as overarm passing.

5 Conclusion

Based on the results of data analysis and discussion, the research conclusions are stated as follows:

1. There is a significant relationship between hand-eye coordination and the ability to pass underhand in volleyball of SMPN 24 Makassar students.
2. There is a significant relationship between arm muscle strength and the ability to pass underhand in volleyball of SMPN 24 Makassar students.
3. There is a significant relationship between balance and the ability to pass underhand in volleyball of SMPN 24 Makassar students.
4. There is a significant relationship between hand-eye coordination, arm muscle strength and balance with the ability to pass underhand in volleyball of SMPN 24 Makassar students.

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