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Correlation among flexibility of back muscle with smash skill kedeng on sepaktakraw

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Abstract
This study aims to determine the correlation among the flexibility of back muscle with smash skill kedeng on sepaktakraw. The research was conducted in the gymnasium of sepaktakraw Faculty of Sport Science, State University of Makassar South Sulawesi in March 2017. The sample of the study is 38 students on student activities sepaktakraw Faculty of Sport Science, State University of Makassar South Sulawesi Indonesia (BKMF FIK UNM).
This method used in this study is an associative quantitative descriptive method with correlation analysis models. The collecting data uses test and measurement techniques as a primary data through some tests, namely smash skill kedeng test, and flexibility of back muscle test.
The results of this study finds that there is a positive correlation between the flexibility of back muscle (X1) with the smash skill kedeng on sepaktakraw (Y) is the mean flexibility of back muscle of 35,87, maximum score of 40, minimum score of 32. In the correlation table generates a probability value of 0.05 is greater than the probability value sig or [0.000 < 0,975], then H0 rejected H1 accepted and significant meaning and have a positive correlation to smash kedeng with the level of relations is (r) 0,953 showed a very strong positive correlation and coefficient of determination (kd) or Pearson correlation by: KD = r^2 x 100%, $(0.953)^2$ x 100% = 0,90,0 x 100 = 90.0, which means smash skills kedeng determined by flexibility of back muscle and the rest influenced by another factor of 10,0.

Keywords: flexibility of back muscle, Smash, Sepaktakraw

Introduction
Sepaktakraw is one sport that has been played and recognized by the world community. Especially in Indonesia, sepaktakraw has been used as a sports education, recreation and achievement. As a sporting achievement and therefore the need to increase the quality and quantity of coaches, athletes and organizational management was good early on, especially the development of students is an asset most essential and the potential to be developed, so the achievement sepaktakraw Nationally.
Faculty of Student Activities office (BKMF) Makassar UNM FIK is one of the coaching centers and exercise sepaktakraw which serve as a platform of education and training talented students as a form of training delivery system to achieve the desired result (outstanding athlete). FIK BKMF UNM as research objects chosen by the researchers because already fostering achievement for students of sport science faculty.
Based on observations of researchers in athletes/students BKMF sepaktakraw FIK UNM practice and play on each team teams rely on one player in the offensive end, then the inaccuracy of time (timing) when jumping and kicking a ball, the position of the foot that cannot straight when performing smash that caused the limited range of the foot when hitting the ball, so the ball does not go through the net, not sharp and even soar due to the low level of flexibility and posture is not stable when hovering and landing due to lack balance. Therefore, the students are expected to have the skills BKMF other basic techniques of which is able to position itself as a striker who is responsible and can contribute to the team and the team to win a game. So that one of the basic techniques that need to be improved and overpowered is a smash kedeng. Why smash kedeng? Because smash kedeng the end of the game sepaktakraw motion to add points and smash kedeng also include the type of smash easily taught to all players in augmenting their skills.
Basically, smash kedeng can be done if the player/athlete has the physical components that support such power, durability or endurance, of explosive power, speed, flexibility, agility, coordination, balance, accuracy, and reaction. The physical components, the most profoundly affect smash kedeng if examined from the dimensions of muscle use based on the movement pattern is a flexibility of back muscles to facilitate Smasher regulate the movement of the foot and kicks the ball during the drift, Further research will be the focus of the back muscles flexibility physical component and kedeng smash skills. This prompted the researchers to conduct a study with the title "correlation between flexibility of back muscles smash skills kedeng (BKMF) sepaktakraw FIK UNM, student of Makassar. This research is expected to contribute significantly to the advancement of sports Indonesia, especially for branch sepaktakraw.

Problem of the study
Based on the background mentioned, as well as the identification of the problem definition problem in this research is formulated as follows, whether there is a positive

correlation amont the flexibility of back muscles with smash skills kedeng on sepaktakraw

Theoretical Framework

Sepaktakraw

According to Sofyan Hanif (2015: 3) Sepaktakraw is a historic sport, culture of the nation, and the state of nature as well as the results of the Earth Indonesia. Sepaktakraw or sepak raga was played in the era of the kingdom of Sriwijaya, Majapahit and Gowa. In Indonesia there are many naming of sepaktakraw as in Minangkabau called football Rago, in Riau with high Rago name. Bengkulu named smacking, in Nias called fa Rago / Famai Rago, southern Sulawesi named marraga or maddaga while in Makassar "addaga". The basic technique in a game that is servicing sepaktakraw, soccer precepts and smash. Smash skills kedeng including mastery skill category in sepaktakraw with appropriate backs performed as a player to attack the opponent's area by means back to the net.

Rick Angel (2010:1) Sepaktakraw sport in Indonesia has existed since 1971 was marked by the establishment of sports organizations, namely sepaktakraw perserasi (sepakraga unity throughout Indonesia), which later changed its name in 1986 to persetasi (sepaktakraw unity throughout Indonesia). Starting in 1989, in Indonesia already has a Regional Board (PENGDA) or now called the Provincial Board (PENGPROV) and sepaktakraw Association of Indonesia (PSTI).

Asry syam (2015:36) This game uses rattan ball made of synthetic fiber consists of 12 holes, 20 point deviation, which was originally made of woven rattan with 9-11, circle the ball 42-44 cm (men) and 43-45 cm (daughter), but when the balls used weighing 170-180 grams for men and 150-160 grams for a daughter is played by two opposing teams.

Flexibility of back muscle

James Tangkudung (2012:68) suggested that flexibility is one of the component elements biometric the basis of the physical condition that allows the athlete to display a variety of movement abilities and skills which (1) refrain from any possibility of or get injured during physical activity, (2) allows the athlete to perform extreme movements, (3) improving blood flow to the muscle fibers so.

Michael Carrera and Tudor Bompa (2015:68) Flexibility is more difficult to improve in adulthood, it is best start young and make both warming up and streaching an important part of the training program.

Lisa A. Kurtz (2008:80) Flexibility is another important component of motor skill in the developing child. Balance skills are based upon input from several sensory modalities.

Methodology

Research Design

This study uses multiple correlation analysis model that aims to measure the level of direct and indirect correlation between one variable to another variable (variable X with variable Y).

Research Setting and Subject

Retrieval of data held in the sports hall sepaktakraw Faculty of Sport Science, State University of Makassar, South Sulawesi province. The timing of this study was divided into two phases: first, testing the research instrument in January 2017 and the second stage, the data collection was conducted in March 2017.

Research Procedure

Participants

Sources of data in this study were students BKMF sepaktakraw Faculty of Sport Science, State University of Makassar, South Sulawesi province. Sampling using total sampling that examines the total population were 38 male students.

Tehnique of Data Collection

Collecting data in this study using the technique of test and measurement and documentation primarily through skills tests smash kedeng and flexibility of back muscle.

Technique of Data Analysis

The analysis technique used in this study is hypothesis filing descriptive statistics inferential. Before testing the hypothesis test is conducted prior requirement that descriptive analysis of the data, the frequency distribution analysis, the data normality test, homogeneity test, tests of significance, the level of correlation analysis test.

Result

Descriptive Data

Descriptive data analysis performed on each of the variables studied. Descriptive analysis of data can be seen in the following table.

Descriptive Data Smash skills Kedeng on Sepaktakraw and flexibility of back muscle

Table 1

Statistic	Flexibility of Back Muscle	*Smash* skill Kedeng Sepaktakraw
Mean	35.87	18.74
Std. Error of *Mean*	.320	.279
Median	36.00	19.00
Mode	35	19
Std. Deviation	1.975	1.719
Variance	3.901	2.956
Range	8	6
Minimum	32	16
Maximum	43	25
Sum	1366	715

Descriptive analysis of data obtained by the Mean flexibility of back muscle of 35.87, standard deviation of 1.975, 3.901 variance, maximum score 43, minimum score 32, range 8, median 36.00, Mean dynamic balance of 46.45, standard deviation 2607, 6794 variance, maximum score 54, minimum score 38, range 13, median 47.00.

Mean smash skill kedeng of 18.74, standard deviation of 1.719,variance of 2.956, maximum score 25, minimum score 16, range of smash skills kedeng 6, median 19,00.

Analysis Data

a. Normality Data

Terms of normality analysis of data using the Kolmogorov-Smirnov test aims to determine whether the data were

normally distributed. The hypothesis will be tested with a 0.05 significance level α is:

H_0: If the probability < 0.05, then H_0 is rejected to mean the population is not normally distributed.

H_1: If the probability ≥ 0.05, then H_1 is accepted means that the population is normally distributed.

Table 2: Summary results of the normality test flexibility of Back Muscle and Smash skill Kedeng on Sepaktakraw FIK UNM students.

Kolmogorov-Smirnov Test			
		Flexibilty of back muscle	**Smash skill kedeng on sepaktakraw**
N		**38**	**38**
Normal Parameter[a]	*Mean*	35.87	18.74
	Std. Deviation	1.975	1.719
Most Extreme Differences	Absolute	.120	.150
	Positive	.091	.150
	Negative	-.120	-.113
Kolmogorov-Smirnov Z(Test Statistic)		.737	.923
Asymp. *Sig*. (2-tailed)		.649	.362

a. Test distribution is Normal.

a. Normality test Data Skills Smash Sepaktakraw (Y)
Probability value of 0.362 so that the p-value = 0.362 > α 0,05). The data were normally distributed of smash skills kedeng on sepaktakraw

b. Normality test data flexibility of back muscle (X1)
Probability value of 0.649 so that the P-value = 0.649 > α 0,05). The data were normally distributed of flexibility of back muscle.

b. Correlation Analysis

Table 3: The results of correlation flexibilty of back muscle and Smash skill kedeng on sepaktakraw

Correlations			
		Flexibilty of back muscle	**Smash skill kedeng on sepaktakraw**
Flexibility of back muscle	Pearson Correlation	1	.953**
	Sig. (2-tailed)		.000
	N	38	38
Smash skill kedeng on sepaktakraw	Pearson Correlation	.953**	1
	Sig. (2-tailed)	.000	
	N	38	38
*. *Correlation* is *sig*nificant at the 0.05 level (2- tailed			

Analysis of the correlation flexibility of back muscle to smash skills kedeng on sepaktakraw
In the correlation table generates a probability value of 0.05 is greater than the probability value sig or [0.000 < 0,05] H_0 rejected and H_1 accepted meaning significant and have a positive correlation to smash kedeng with the level of relations X_1 with the variable Y is (r) 0.953 shows very strong positive correlation and coefficient of determination (Kd or Pearson correlation by:
$Kd = r^2 \times 100\%$, $(0.953)^2 \times 100\% = 0.90 \times 100 = 90.0$, which means smash skills kedeng determined by the flexibility of back muscles and the rest influenced by another factor of 10.0.

Hypothesis Testing
Correlation flexibilty of back muscle with smash skills kedeng on sepaktakraw.

Table 4: T test results flexibility of back muscle with Smash Skill kedeng on Sepaktakraw

Model	B	T_{count}	T_{tabel}	Statement
Smash skill kedeng on sepaktakraw	0,89	4,522	2,024	H_1 accepted

From the calculation T_{hitung} 4.555 > 2,024 t table then H_0 rejected H_1 accepted. This means there is a significant correlation between the flexibility of back muscles smash skills kedeng on sepaktakraw

Table 5: F-test the flexibility of back muscles to smash skills kedeng on sepaktakraw.

Varians	Df	F_{hitung}	F_{tabel} (α= 0,05	Sig
Regresi Residu	3 34	74,55	2,88	000
Reduksi Total	37	-	-	-

From the calculation of F_{hitung} 74.55> F_{tabel} 2.88 then H_0 rejected H_1 accepted. This means there is a significant correlation between flexibility of back muscles to smash skills kedeng on sepaktakraw.

Discussion
Based on the overall results of hypothesis testing showed a significant positive correlation. Description of hypotheses can be explained as. The data analysis for variable flexibility of back muscles X_1 with a mean score of 35,87, the range of 8, minimum score 32 and score maximum 40, it indicates that the students of the Faculty of Sport Sciences who practice in the bureau activities of university students (BKMF) sepaktakraw have the ability flexibility of back muscles with an average of 36 or 60.5%, with the number of frequency of

20 people. This means that the flexibility of back muscles gives the effect of 90.0% against kedeng on sepaktakraw smash skills.

Conclusion

Based on data analysis and discussion, the results of this study can be summarized as follows. The results of testing hypothesis states there is a positive correlation between flexibility of back muscles with smash skills kedeng on sepaktakraw. This shows that the flexibility of back muscles strong contribution to the smash skill kedeng means the better of an athlete back muscles the better the ability to smash kedeng.

Suggestion

First, for teachers of physical education and health, to improve learning outcomes for physical education sport game sepaktakraw should need to consider factors such as physical components supporting students as well as sports facilities and infrastructure sepaktakraw. Secondly, it is expected that the results of this study can be used as a reference or comparison for sports teachers, trainers and sports coaches in providing teaching materials and exercises on the learner as well as athletes. Third, expected in future studies, especially studies that are relevant to this study suggested involving more basic techniques and other physical components, as well as using a larger sample in order to achieve results in a more perfect. Fourth, the exercise program given to back muscles flexibility must be adjusted to the effectiveness of the contribution given because in reality there are other influencing factors.

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