THE EFFECT OF ARM MUSCLE POWER TRAINING ON LONG SERVICE SKILLS IN EXTRACURRICULER BADMINTON GAMES

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Abstract

This research is motivated by the fact that the long service skills performed by extracurricular student at SMA Negeri 2 Bangkinang Kota are not optimal and lack precision in their execution. The long service is the first stroke in the game of badminton and is considered part of the small ball sports category. Arm muscle power training is method to strengthen the arms using two exercises: push-ups and dumbbell higg swings, making it an effective method to improve long service skills. The research aims to determine the influence of arm muscle power training on long service skill. The research methodology employed in this is pre-experimental with a One Group pre-tets and post test design. Data was collected through purposive sampling with inclusion and excluxion criteria resulting in a sample size of 20 individuals. Data analysis utilized the Wilcoxon test and paired Sample T-test. Based on the statistical output "Test Statistics" it was found that the Asymp.Sig (2-tailed) value is 0.000. Since 0.000 is less than < 0.05, it can be concluded that there is a significant difference between the pre-test AMD Post-Test scores.in conclusion, this research demonstrates significant deifference between the pre-test and pos-test scores.in conclusion, this research demonstrates a significant influence of arm muscle power training on long service skills among extracurricular students at SMA Negeri 2 Bangkinang Kota.

Keywords: Power; Arm Muscle; Long Service Skills

INTRODUCTION

Badminton is a sport that is included in the group of small ball games, where in Indonesia has positioned itself as a very popular sport among the public, because the achievements achieved are able to compete with other countries in the world. The consequence of these achievements is that every player is required to always achieve optimal achievements.

Therefore, both players and coaches are required to carry out scientific

training program patterns in accordance with current sports developments. The process of coaching in sports cannot be done instantly, but must go through a long process. To achieve optimal achievement requires perseverance, sacrifice, determination and is based on high motivation to perform optimally.

Badminton is a popular sport in the world and many enthusiasts, badminton or badminton is played two against two or can also be called the doubles category, and badminton can also be played one on one can also be called the single category. The basic technique of badminton long serve strokes is commonly used in the early warm-up of a match with an opponent, there are several basic techniques for the shuttlecock to arrive in the opponent's area (Sufihadi Igo, 2022).

The game of badminton is a sport that belongs to the group of game sports. The game of badminton is usually played by a man against a man (men's singles), a woman against a woman (women's singles), a pair of men against a pair of men (men's doubles), a pair of women against a pair of women (women's doubles), a pair of men / women against a pair of men / women (mixed doubles).

The game of badminton is a sport that is played using nets, rackets, and balls with beating techniques that vary from relatively slow to very fast accompanied by feint movements while the basic techniques in the game of badminton are serve, step movement, backhand stroke, forehand punch and smash stroke. A badminton athlete must master all the basic techniques in it. Because basic techniques are the beginning of a game to achieve the success of the game itself and the implementation of sports activities must be carried out in stages and systematically (Guretno, 2022).

METHOD

The method used in this study is the quasi experimental method (Quasi Experiment Methode). According to Sugiyono (2016), the experimental research method is this research method, namely "one group pretest-posttest". The research design carried out pre-test first was then given a threat and post-test was carried

out at the end.

Thus, it can be known more accurately because it can compare between before treatment and after treatment (Sugiyono, 2001). This study will compare the results of the pretest and posttest on the long service skills of extracurricular students at SMAN 2 Bangkinang Kota The variables of this study are dependent variables, namely long service skills, and independent variables in the form of push up exercises and dumbbell hight swing.

RESULT AND DISCUSSION

Normality test using Kolmogorov-Smirnov and Shapiro-Wilk One-Sample test to find out whether population data are normally distributed or not. The significant level of the test was $p = 0.05$ which was compared to the significant level compared to the sample number of 20 extracurricular students. test of the effect of arm muscle power training on long service skills in extracurricular student badminton games At SMAN 2 Bangkinang Kota, this was done on the basis of the Kolmogorov-Smirnov One-Sample test as shown in the table below:

Table 1. Normality Test Results

Tests of Normality						
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistics	Df	Sig.	Statistics	Df	Sig.
Pretest Results	.118	20	.200*	.968	20	.717

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction
Tests of Normality

Based on the table shows the results of normality testing of the positive effect between arm muscle power training on long service skills in extracurricular student badminton games at SMAN 2 Bangkinang Kota, namely by using IBM SPSS based on the Kolmogorov-Smirnov One-Sample testIt is known that the significant value of pre test and post test .200 is greater than 0.05, so it can be said that the data is normally distributed. Regarding normally distributed data, the test

used is the parametric paired t-test

Linear Test

This test aims to find out whether the data we have is in accordance with the linear line or not (whether the relationship between the variables to be analyzed follows the line or not). The linearity test in this study used IBM SPSS. To find out more can be seen in the table as follows

Table 2. Linearity Test Results

		ANOVA Table				
			Sum of Squares	Df	Mean Square	F Sig.
postest results * pretest results	Between Groups	(Combined)	112.450	10	11.245	.560 .810
		Linearity	7.407	1	7.407	.369 .559
		Deviation from Linearity	105.043	9	11.671	.581 .784
	Within Groups		180.750	9	20.083	
	Total		293.200	19		

The decision-making method for the linearity test is determined as follows:

a. If the sig value is linearity, the significance level is (a) and the sig value. Deviation from Linearity> the level of significance (a) then it can be concluded that two variables have a linear relationship.

b. The opposite is true

In this test it is determined that a is 5% (0.05). Based on the output table above, it can be seen that.

Sig value: Linearity of 0.00, This indicates that the value of the Sig Linterity > a significance level (a)

Sig value. Deviation from Linierity of 0.784. This indicates that the value of sig. Deviation from interity significance level (a)

Based on the two statements above, it can be concluded that in decision making in the linerity test of the output above, obtained 0.784 greater than 0.005, it can be concluded that there is a significant linear between the variable of arm muscle power training (X) with the variable of long service skill (Y) and also the positive between arm muscle power training to long service skillsIn Badminton games,

extracurricular students at SMAN 2 Bangkinang Kota have a significant linear relationship.

Hypothesis Testing (T Test)

The results of processing pretest and posttest category data using SPSS can be seen in the following table.

Table 3. Paired Samples Test

	Paired Differences					t	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 Pretest Results - POSTEST Results	-19.350	4.782	1.069	-21.588	-17.112	-18.095	-19	.000

Based on the paired test it is known that the significant value is 0.000< 0.05, so it means that there is a significant difference between the pre test category and the post test as in the descriptive statistical table it is known that every long service punch made and cock falls at the highest point, the number of points obtained will be more than during the pre test. This means that there is a significant effect of arm muscle power training on long service skills in extracurricular student badminton games at SMAN 2 Bangkinang Kota.

CONCLUSION

Based on the results of data analysis, description, testing of research results and discussion, there is a conclusion that there is a significant influence between arm muscle power training and badminton long service skills of extracurricular students at SMAN 2 Bangkinang Kota, with a statistical output value of "Test Statistics", known to Asymp.Sig (2-tailed) worth 0.000. Because the value of 0.000 is less than 0.05. So it can be concluded that "there is a significant difference in the norm category of the number of pre-test points with the post test". The conclusion of the results of this study has advantages from previous research conducted by Ellen B. Lomboan, Jeanne R. Malonda,

Pramacella C. I Sigarlaki in 2018 with the title The effect of arm muscle strength training on long serve ability in badminton games in students of SMA Negeri 1 teacher Lombok Kalawat" where this previous study only evaluated the treatment of arm muscle strength, In contrast to the results of the current study which is superior because the current research makes training programs and is presented and applied in the field from the smallest load to the largest load carried out for 16 meetings, and also the current research is statistically superior to the previous study where there is an influence magnitude of -10.871 while the current research has an influence magnitude of 19.35 so based on differences in research results It can be concluded that this research is superior to previous research.

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