DIFFERENCE INFLUENCE EXERCISE LOAD METHODS SET AND PYRAMID SYSTEM ON CHANGE HYPERTROPHY OTOT ON MEMBER JETSET FITNESS PALEMBANG

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Abstract

This study aims to determine the effect of weight training system set and pyramid system with high motivation and low to muscle hypertrophy changes in members Jetset Fitness Palembang. This research is Quasi experiment research and the design used in this research is Anova 2x2. The population of this study is members of Jetset Fitness amounted to 92 men. Sampling technique using purposive sampling with based on certain characteristics so that the total sample of 40 members. Data collection techniques used questionnaires and tests. The test instrument uses a tape measure with a centimeter unit. Data analysis using spss 20.0 with siginifikansi level of 0.05.The results of the study were: (1) There was a significant influence on pyramid system weight training weight hypertrophy mean 88,100 higher than weight training with set system with mean of 83,750. (2) There is a significant influence on muscle hypertrophy between the set and pyramid system motivation groups F = 4.707 and the significance level of 0.000.(3) There is interaction influence between exercise method and motivation tehadaphypetrophy muscle with Fhitung ≥ Ftabel is 4,707 ≥ 4,01 and level of significance ≤ 0,05 that is 0,036 ≤ 0,05. Conclusion from the result of weight training research of system set and pyramid method that is more effective weight training using pyramid method compared with set system to change muscle hypertrophy.Therefore the authors propose a suggestion for a muscle hypertrophy program can apply weight training using a pyramid system.

Keywords: Weight Training, System Set, Pyramid, Muscle Hypertrophy

PRELIMINARY

Sports activities can be done outside or inside the room. Outdoor sports activities such as open air, on streets, stadiums and parks. In addition, indoor sports activities such as in the house, hall indor, gymnasium, fitness center or gym, gymnastics studio and many more.Fitness provides the benefits of higher fitness, health and strength levels (Kadek et al, 2014: 2). Exercise such as weight training is very practical and easy to do to get physical fitness. Weight training can be done using outside weights that are free weights (free weight) such as dumbbell, barbell, or machine load (Thomas, 2002: 10).

Exercise program is very important as a reference to implement and control a training process. According to Pekik (2009: 19), to achieve the goal of exercise or fitness optimally, it is necessary to know the basic principles in implementing fitness training programs that have an important role on physiological and psychological aspects. One of the public health centers in Palembang is Jetset Fitness.The fitness center offers a variety of fitness training programs, among others; (1) fat loss, (2) weight gain, (3) rehabilitation therapy, (4) physical fitness, (5) body building, and (6) body shaping.

Based on a preliminary study that the author did on member Jetset Fitness Palembang.That, members want to have an ideal body and proportional. However, members still do not understand the forms of training and weight training methods.Results of interviews to 10 members who trained at Jetset Fitness Palembang male sex. It was found that 7 out of 10 members wanted to join the body building program. However, the Member does not know about the proper training methods for body building program.

A set system training method is an exercise method that imparts a group of muscles with a certain load in multiple sets and repetitions sequentially,interspersed with recovery or rest after completion of a new move on another muscle group. While the pyramid training method is training by raising the load after completion of a set, along with the addition of the load then the number of reps reduced (Sukadiyanto, 2011: 106).

Aswan's (2006) results show that, pyramid meode load exercises with falling reps and fixed sets are more effective against muscle hypertrophy. Similarly, research by Arhesa (2015) which states that the method of pyramid and inverted pyramid exercise can increase muscle hypertrophy. In addition, research conducted by Putra (2014) states that the method of weight training Pyramid significant against muscle hypertrophy.

Various studies that examine the effect of pyramid training programs and system sets on changes in muscle hypertrophy have been widely practiced. However, it is not known whether there is a difference in the effect of weight training on the set system and pyramid set against muscle hypertrophy in the jetset fitness palembang member.

METHOD

The method used in this research is the experimental method with the design of peneilitian using Anova.

Population and Sample

The population in this study is members of Jetset fitness Palembang amounted to 92 men. Sample Technique in this research man gender, that is all member of active men amounted to 40.Sampling technique in this research using purposive sampling technique. Grouping the sample using a questionnaire, so divided into 4 groups of group members who use high and low system load training group and group members who use high and low pyramid load system training.

Design and Procedure

The research design used is a pretest-posttest design with 2x2 factorial.

Motivation	Exercise Method	
	System Set (A1)	System Pyramid (A2)
High motivation (B1)	(A1B1)	(A2 B1)

Low motivation(B2)	(A1 B2)	(A2 B2)

Picture 1:Research design(Supardi, 2017:301)

Information:

A1B1 = group was treated with a highly motivated set system
A2B1 = group was treated with a highly motivated pyramid system
A1B2 = group was treated with a low-motivated Set system
A2B2 = group was treated with a low motivated pyramid system

This study was conducted for 8 weeks, starting from March to May 2018 with frequency of three exercises a week. The study was conducted on Monday, Wednesday and Friday.

Instrument

Data collection techniques in this study using questionnaires and tests. Questionnaires were used to find out the motivation to follow the weight training program of system set and pyramid method which was grouped by high and low motivation category, while the test was used to measure the muscle hypertrhopy before and after treatment 24 times.

RESULTS

After all the data collected required the existence of data analysis. The analysis of the data includes: (1) testing of instruments consisting of validity and reliability test, (2) prerequisite testing that is test before using two way anova with normality and homogeneity test, (3) hypothesis testing with anava two-lane (two way anova). All such testing is a key requirement in drawing conclusions.

Instrument Test

a. Validity test

Table 1: Instrument validity test

variabel	Value table	Value product moment	Desciption
Item 1	0.495	0.444	Valid
Item 2	0.479	0.444	Valid
Item 3	0.510	0.444	Valid
Item 4	0.663	0.444	Valid
Item 5	0.477	0.444	Valid

Item 6	0.486	0.444	Valid
Item 7	0.477	0.444	Valid
Item 8	0.486	0.444	Valid
Item 9	0.711	0.444	Valid
Item 10	0.663	0.444	Valid
Item 11	0.488	0.444	Valid
Item 12	0.483	0.444	Valid
Item 13	0.450	0.444	Valid
Item 14	0.529	0.444	Valid
Item 15	0.543	0.444	Valid
Item 16	0.483	0.444	Valid
Item 17	0.540	0.444	Valid
Item 18	0.666	0.444	Valid
Item 19	0.490	0.444	Valid
Item 20	0.459	0.444	Valid

Based on the calculation spss20.0, found that the level of significance of more than 0.444 then the data is said to be valid.

b. Test reliability

The data for the reliability test is taken from the test data of the validity of the previous calculation. For reliability test the researchers also calculated with SPSS 20.0.

Table 2: Reliability test

Reliability Statistics

Cronbach's Alpha	N of Items
0.624	20

Reliability test 0.624 with the provision of cronbach alpha value of 0,600-0,799 means the level of strong relationship so that the statement items and questions in the research variables can be used for further research.

Test Prerequisites

Test homogeneity

Homogeneity test is done to find out whether the sample usedin homogeneous research or not, so if the homogeneity is fulfilled, then the researcher can do hypothesis test using two pathAnava. The data used by this homogeneity test is motivational data. The homogeneity test of posttest system set and pyramid is done through SPSS 20 calculations.

Table 3: homogeneity test

Dependent Variable: HYPERTROPHY OTOT			
F	df1	df2	Sig.
3,688	1	38	,062

From the table the calculations with the help of SPSS 20.0 obtained significance value of 0.062 and the sample is said to be homogeneous if the significance value ≥ 0.05 and because 0.062 ≥ 0.05, then H0 is accepted so that the sample is homogeneous. Once the data is known to be homogeneous, then the motivational data through the posttest.will then be tested and analyzed by the researcher in hypothesis test using 2 way anova statistical test (two way anova). And to be able to use the hypothesis test, there is a prerequisite test that must be met other than this homogeneity test, that is the normality test of motivation data to see if the data is normally distributed or not, if the data is normally distributed.

Normality test

Normality test is one of the requirements for two-lane anava statistic test. This normality test aims to determine whether the student learning outcomes that have been obtained in the study of normal distribution or not. The calculation in the normality test is performed for each class that becomes the research sample.

Table 4: normality test

Exercise Method	MOTIVASI	Mean	Std. Deviation	N
SYSTEM PYRAMID	MOTIVASI	83,75	7,489	20
	Total	83,75	7,489	20
SYSTEM	MOTIV	88,10	4,930	20

PYRAMID	ASI			
	Total	88,10	4,930	20
Total	MOTIV ASI	85,93	6,635	40
	Total	85,93	6,635	40

Hypothesis testing

Here is the output of the two-track anova hypothesis test with SPSS 20.0.

Table 5: Two-lane anova test

Tests of Between-Subjects Effects					
Dependent Variable: HYPERTROPHY OTOT					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	189.225a	1	189,225	4,707	,036
Intercept	295324,225	1	295324,225	7346,614	,000
SISTEM	189,225	1	189,225	4,707	,036
MOTIVASI	,000	0	.	.	.
SISTEM * MOTIVASI	,000	0	.	.	.
Error	1527,550	38	40,199		
Total	297041,000	40			
Corrected Total	1716,775	39			

Result of hypothesis test by using two path anava can seen in table show with significance value 0,036 then <0,05 then statement accepted that there is influence of motivation to set system and pyramid.

Dependent Variable: HYPERTROPHY				
			95% Confidence Interval	
HYPERTROPHY OTOT	Mean	Std. Error	Lower Bound	Upper Bound
SISTEM SET	83,750	1,418	80,880	86,620
SISTEM PYRAMID	88,100	1,418	85,230	90,970

Hypothesis test results can be seen in the table shows the increase of pyramid load muscle weight training hypertrophy mean 88,100 higher than the weight training with system set with the mean of 83,750.

DISCUSSION

Before determining which group to use, the researchers collect preliminary data from the muscle changes which then the data are analyzed. The results show that the sample system set and homogeneous pyramid system. In addition to knowing the above, the data is used to obtain data in hypothesis testing.The test result of the system weight training and pyramid load method was first tested normality. After the normality test is met, then proceed with two-lane anava test.

Based on the findings of researchers, the effect is caused by the enlargement of muscle mass in members through a series of physical exercises such as weight training, nutrition, and adequate rest. Rest is the time or opportunity required by the body to replenish the fuel or nutrients and relieve the pressure on two body systems: the local muscular tissue system and the central nervous system.The quantity and quality of recovery greatly determines the nervousness of the body and muscles to deal with subsequent growth stimuli or exercise (Rai, 2006: 23).

The result of hypothesis analysis done by using two path anava found that there is a significant increase to pyramid system weight training muscle hypertrophy with mean 88,100 higher than with weight training with system set with mean of 83,750, and there is significant influence between group motivation system set and pyramid with known that Fcount = 4.707 and significance level 0.000, while for Ftabel with 5% significance level and df of numerator 1 obtained value Ftabel = 4.01. Then because Fhitung $\geq$ Ftabel is 4.707 $\geq$ 4.01 and the level of significance $\leq$ 0.05 is 0.036 $\leq$ 0.05,H1 accepted so it can be concluded that there is a significant influence of interaction between exercise methods and motivation tehadap muscle hypetrophy.

CONCLUSION

Based on the results of research and discussion, it can be concluded that:

1. There are significant differences in the effect of the training methods of set and pyramid system on muscle hypetrophy in members of Palembang's fitness jetset.
2. There are differences in muscle hypertrophy between members who have high motivation and low muscle hypetrophy in members jetset fitness palembang
3. Of the two types of exercises trained on membersjetset fitness palembang, there is the influence of interaction between training methods and motivation tehadap muscle hypetrophy.

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