

The Effectiveness of Weight Training With Pyramid Set Method and Drop Set Against Muscle Hypertrophy in Members Adonis Fitness Cafe in Yogyakarta



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ABSTRACT: The purpose of this study was to determine the effect of weight training with pyramid set method against muscle hypertrophy of Adonis fitness members cafe, knowing the effect of weight training with the drop set method on muscle hypertrophy member Adonis fitness café, and know the difference the effect of weight training between the pyramid set method and the drop set method against muscle hypertrophy of members of Adonis fitness café Yogyakarta. This type of research is an experiment using two Group Pretest-Posttest Experimental Design. Population used in This study was an active member of 70 people who exercised. Retrieval purposively determined samples that meet research inclusion criteria namely male members with the aim of increasing muscle mass / hypertrophy, namely: a total of 20 people. The division of groups in this study by means of ordinal pairing. For group I weight training using the pyramid methodsets and group II weight training using the drop set method. The results showed that: (1) there was a significant influence From weight training using the pyramid set method to muscle hypertrophy member of Adonis fitness, with a significant value of 0.000 ($p < 0.05$) for arm muscles, and a significant value of 0.001 ($p < 0.05$) for pectoral muscles, (2) there is a significant effect that Significance of weight training using the drop set method against hypertrophy muscle member Adonis fitness, with a significant value of 0.000 ($p < 0.05$) for muscle arms and chest, and (3) Based on the mean difference (mean DF), there are Increased muscle hypertrophy among weight training groups pyramid set method (1.3500) and drop set method (1.8000) with p value (sig) of 0.038 ($p < 0.05$) for arm muscles, and increased muscle hypertrophy between exercise groups Pyramid method load set (1.2500) and drop set (1.9500) with p value (Sig) amounted to 0.007 (< 0.05). It can be concluded that weight training drop set method More influential for muscular hypertrophy than the pyramid set method.

KEYWORD: weight training, pyramid sets, drop sets, and muscle hypertrophy.

I. INTRODUCTION

Today people's desire to have a healthy body, ideal, and athleticism has improved. This is supported by various events Body Contests such as L-men Body Contest, Ultimate Body Contest, Men's Health Body Contest, Miss Fitness, Men Physique, Men Fitness, Parties and other special events. Every year, the number of participants in the contest Increasing. Data obtained by the official website of Ultimate Body Contes The number of participants who entered the beginner category in 2015 was 114 participants, in 2016 as many as 155 participants, in 2017 as many as 170 participants, In 2018 there were 300 participants The appearance of a man can be judged by the shape of the body he has. A man who has an athletic body, chest The field and six pack abs will look more charming and confident. Thing This has motivated many men to get a good body. he coveted. One way to get it is through exercise especially weight training.

Many fitness centers have now been established to help Make it easier to realize the desire to have an athletic body shape, because in that place provides a variety of tools so that A variety of exercises and types of exercises can be done to avoid boredom. In addition, the variety of exercises will make the program more achieved Fast and efficient. One of the Fitness Centers in Yogyakarta whose place is quite spacious and varied and complete facilities is Adonis Fitness Café located on Jalan Ringroad Utara Ruko Gejayan Square Block 4 Condong Chess Depok Sleman Yogyakarta. Besides that, a variety of exercise programs Offered along with personal trainers⁶ in training assistance. Programs offered include muscle hypertrophy, muscle loss

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and weight gain, body shaping and rehabilitation of diseases and injuries. Exercise should have clear and purposeful goals, meaning understand what you want to achieve in practice, for example; weight gain body, a decrease in fat levels in the body so that the posture becomes more good, muscle building (muscle hypertrophy), increased strength and endurance muscles to support activities in sports, as well as increased fitness. The body is a combination of desired shapes accompanied by fitness cardiovascular (heart and pulmonary) and other exercise purposes.

Clear exercise objectives will make it easier to determine the program. Proper, safe and effective exercise. Good practice, not quite achieved just by training hard, but also having to practice smartly (Train Hard and Smart), meaning learning to master the basic principles of the practice alone. These principles should be learned, mastered and practiced from the moment the beginning of the training strategy period in order to achieve the expected results. To Achieving training or fitness goals optimally, it is necessary to know the basic principles in fitness training that have an important role in physiological as well as psychological aspects. The basic principle is to choose exercises effective and safe, combining exercise and lifestyle, in practice must have clear goals or objectives, loading must be overloaded (more loads) and progressive, specific exercises and individual, reversible, non-imposing ability and resilience, continuity, safety, avoidance of means which is wrong and detrimental, perform the exercises in the correct order. Based on these basic principles, then design an exercise program very important.

In addition to the principle of practice, everyone must know and understand training methods. Each must choose and own a system or suitable exercise method. But for a beginner, choose or Applying the exercise method to be done is not an easy thing. Similarly, for those who have practiced for a long time, the usual method will because boredom or stagnation. In fact, there are many kinds of practice methods which can be used to devise or design exercise programs, among others: Super Set, Compound Set, Set System, Circuit Training, Pyramide Set, Drop Set, and many more training methods. Another used inside the fitness center.

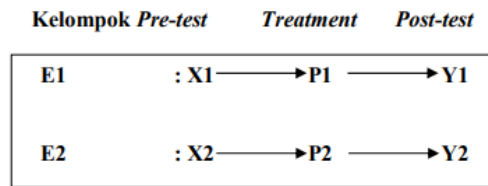
Adonis Fitness Cafe is dominated by male members who choose Exercise goals for muscle hypertrophy. Of the several existing exercise methods, Most members use the Set System and Pyramid Set methods. Usually suggested by instructors or advice from training friends. Exercise methods The most popular and widely used by members is the pyramid method. The set is considered more effective for adding muscle hypertrophy compared to set system. This understanding also affects new members, they It would be easy to be influenced to use the pyramid set exercise method to muscle hypertrophy. However, the results shown from the pyramid set method are not optimal, such as: muscle circumference that does not increase and muscle shape that does not clear or detailed. This can happen due to several factors. For example: poor movement, so that it does not hit the target of the trained muscle, load intensity that is not yet appropriate, too monotonous with one method or lack of variety of exercises. In addition to the pyramid set method, there are other methods that can Applied in exercises to muscular hypertrophy programs. The drop set represents The exercise method that is almost the same as the exercise method in general, will but on this method do 1 additional set after completing 3 sets of cores. Just like the pyramide set. The drop set method in principle performs 1 set additional after completing 3 sets of cores in reverse from heavy to light without pause / rest and done until failure / failure positive (can no longer be lifting perfectly) on the weight of each set. This method will create Muscle contraction is maximum, due to the excess load (overload) received muscles at the time of performing additional sets.

Lack of understanding as well as knowledge of this practice method making exercises less varied so that they tend to be monotonous, and often Causes saturation which will later make the results of the exercise not optimal. In addition, in practice there is a principle of practice (individual principle), that is, every People are unique individuals and no two individuals are exactly alike in this world. This implies that each individual has a response that Different from the training load or training method received. It could be Because of differences in a person's physical capacity or movement skills, there will be more Suitable using pyramid set method which is done with 3 sets of load light to heavy with pauses/breaks between sets, rather than using the method drop sets that add 1 set after completing 3 core sets with load Invert of the core set by lowering the load from heavy to light merged without pause.

METHOD

The type of research used in this study is quasi-quasi. experiment. The research design used was Two Group Pretest-Posttest (Suharsimi Arikunto, 2005: 210-211). Implemented by halving The group i.e. the pyramid set treatment group and the other groups were given drop treatment set. The design drawings in this study are as next:

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Information:

- E1 = Experimental Group 1 (Pyramid Set Method)
- X1 = Initial Measurement before Treatment (Pre-test)
- P1 = Pyramid Set Exercise Program
- Y1 = Final Measurement After Treatment (Post-test)
- E2 = Experimental Group 2 (Drop Set Method)
- X2 = Initial Measurement before Treatment (Pre-test)
- P2 = Drop Set Exercise Program Administration
- Y2 = Final Measurement After Treatment (Post-test)

The data collection technique used is to use Experimental method with matching carried out on subjects for the sake of subject i.e. with the aim of separating the two groups by a formula AB-BA, so that both groups depart from the same point of departure before given treatment. The data collection instrument is the tool chosen and used by researchers in collecting data for such activities become systematic and simplified (Suharsimi Arikunto, 2002: 197). The instruments used to measure muscle mass are by using anthropometric measurements of muscles, especially chest muscles and arm, using a tape measure (midline) with centimeters. In this study will be compared Between the two variables, then for different tests will be carried out with t-test for short correlated samples (Short Method). Before the hypothesis test is carried out, a prerequisite test is carried out which includes tests of normality and homogeneity of data. The decision to accept or reject the hypothesis at the significance level of 5%, to analyze the data used computer-aided program SPSS 16.0 for Windows Evaluation Version

RESULT AND DISCUSSION

This study aims to find out which one is more Effective in the formation of muscle mass, namely by the pyramid set method or by using the drop set method. The samples in this study were from Two groups are the group with the pyramid set method and the group with the drop set method. The results of descriptive analysis of research variables as next:

Pretest and Posttest Values of Arm Circumference in Groups with Pyramid set method

Pretest results of arm circumference in the group by the method Pyramid sets can be seen in the following table:

Table 1. Pretest and posttest results of arm muscles pyramid set method

NO	Pretest	Posttest
1	31	32.5
2	30	31.5
3	30	31.5
4	29	30
5	28	30
6	28	29
7	28	29
8	27	28.5
9	27	28.5
10	25	26
Average	28.3	29.6

Pretest and Posttest Values of Chest Circumference in Groups with pyramid set method

Pretest results of chest circumference in groups by the method Pyramid sets can be seen in the following table:

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Table 2. Pretest and posttest results of chest muscles pyramid set method

NO	Pretest	Posttest
1	91	92
2	89	90
3	89	90.5
4	88	89.5
5	86	87.5
6	86	86.5
7	86	86
8	84	86
9	84	86
10	82	83.5
Average	86.5	87.7

Pretest and Posttest Values of Arm Circumference in Groups with Drop set Method

Pretest results of arm circumference in the group by the method The drop set can be seen in the following table:

Table 3. Pretest and posttest results of arm muscles drop set method

NO	Pretest	Posttest
1	31	32.5
2	30	32
3	30	31.5
4	29	30.5
5	29	32
6	28	29.5
7	28	29
8	27	29
9	27	29
10	26	28
Average	28.5	30.3

Pretest and Posttest Chest Circumference Values in Groups with Drop Set Method

Pretest results of chest circumference in groups by the method The drop set can be seen in the following table:

Table 4. Pretest and posttest results of chest muscles drop set method.

NO	Pretest	Posttest
1	91	92.5
2	89	91
3	89	90.5
4	88	90
5	86	88
6	86	88
7	86	88.5
8	84	85.5
9	84	86
10	83	85.5
Rata-rata	86.6	88.5

Normality Test

Testing the normality of data distribution in this study using the kolomogrov-smirnov method. The data normality test is intended to determine the normality of the distribution of research data. The results of the data normality test calculation can be seen in the following table:

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Table 5. Summary of Data Normality Results.

Variable Data Distribution	P-Value	Conclusion
Arm Pyramid Set Pretest	0,942	Normal
Posttest	0,995	Normal
Arm Drop Set Pretest	0,996	Normal
Posttest	0,485	Normal
Chest Pyramid Set Pretest	0,929	Normal
Posttest	0,758	Normal
Chest Drop Set Pretest	0,856	Normal
Posttest	0,968	Normal

Based on the table of normality test results above, it is known that the overall p value > 0.05, namely in the pretest data arm pyramid set method with p (0.942) > 0.05, posttest arm weight method pyramid set with p (0.995) > 0.05, pretest data arm drop method set with p (0.996) > 0.05, posttest data arm drop method set with p (0.485) > 0.05, chest pretest data pyramid set method with p (0.929) > 0.05, chest posttest data pyramid set method with p (0.758) > 0.05, chest pretest data drop method set with p (0.856) > 0.05, and chest posttest data drop method set with p (0.968) > 0.05. It can be concluded that there is no difference in the frequency of observation (results) with the frequency of normal expectations, meaning that all data in this study are normally distributed. Thus, all data in this study meet the assumption of distribution normality.

Homogeneity Test

Homogeneity testing is done with the help of SPSS computer software. The results of the homogeneity test can be briefly seen in this table.

Table 6. Summary of homogeneity test results

Variabel	Sig	Conclusion
arm Pyramid set	0,930	Homogen
arm Drop set	0,950	Homogen
chest Pyramid set	0,789	Homogen
chest Drop set	1,000	Homogen

The homogeneity results showed that the pretest and posttest data of the pyramid method set the arm significance value greater than 0.05 (0.930>0.05), chest significance value greater than 0.05 (0.789>0.05), meaning the pretest and posttest data of the arm and chest pyramid set method is homogeneous. Pretest data and posttest drop method set arm values significance greater than 0.05 (0.950>0.05), chest significance value greater than 0.05 (1.000>0.05), means that the pretest and posttest data of arm and chest drop set method are homogeneous. Both groups are homogeneous so they qualify for a t-test.

Hypothesis Testing

After testing the normality and homogeneity data, the hypothesis test is then carried out. Hypothesis testing in this study is: (1) there is an effect of weight training with the pyramid set method on arm and chest muscle hypertrophy in Adonis fitness members, (2) there is an effect of weight training with the drop set method on arm and chest muscle hypertrophy in Adonis fitness members, and (3) there is a difference in the effect of weight training between the pyramid set method and the drop set method on arm and chest muscle hypertrophy in Adonis fitness members.

Hypothesis I: There is an effect of pyramid set weight training on arm and chest muscle hypertrophy in Adonis fitness members.

To make a decision whether the proposed hypothesis is accepted or rejected, it is defined as follows: Ho: There is no effect of pyramid set weight training on arm and chest muscle hypertrophy of Adonis fitness members, Ha: there is an effect of pyramid set weight training method on arm and chest muscle hypertrophy of Adonis fitness members.

Decision-making criteria test the hypothesis by comparing the probability value (p) with $\alpha = 5\%$. The decision criteria are as follows: (1) if $p > 0.05$ then Ho is accepted and Ha is rejected; (2) if $p < 0.05$ then Ho is rejected and Ha is accepted. The overall results of the hypothesis test are summarized and presented in the following table:

Table 7. Summary of Test Results Paired t test Pyramid set

Pyramid Set Method	P (sig.)	Information
Arm	0,000	Signifikan
Chest	0,001	Signifikan

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From the table above, it is known that the p (sig.) values are 0.000 and 0.001. It turns out that $p(0.000) < 0.05$ and $p(0.001) < 0.05$, thus H_0 is rejected and H_a is accepted; so it can be concluded that there is an effect of pyramid set method weight training on arm and chest muscle hypertrophy in Adonis fitness members.

Hypothesis II: There is an effect of weight training with the drop set method on arm and chest muscle hypertrophy in Adonis fitness members.

To make a decision whether the proposed hypothesis is accepted or rejected, it is defined as follows: H_0 : No effect of weight training drop set method against hypertrophy of the arm and chest muscles of Adonis membersfitness. H_a : There is an effect of pyramid set weight training on hypertrophy of arm and chest muscles of Adonis fitness members.

Decision-making criteria test the hypothesis by comparing the probability value (p) with $\alpha = 5\%$. The decision criteria are as follows: (1) if $p > 0.05$ H_0 is accepted and H_a is rejected; (2) if $p < 0.05$ then H_0 is rejected and H_a is accepted. The overall results of the hypothesis test are summarized and presented in the following table:

Table 8. Summary of Test Results Paired t test Drop set

Drop Set Method	P (sig.)	Information
Arm	0,000	Signifikan
Chest	0,000	Signifikan

From the table above, it is known that the p (sig.) values are 0.000 and 0.000. It turns out that $p(0.000) < 0.05$, thus H_0 is rejected and H_a is accepted; so it can be concluded that there is an effect of weight training drop set method on arm and chest muscle hypertrophy in Adonis fitness members.

Hypothesis III: There is the most effective weight training method of the two methods against hypertrophy of arm and chest muscles of Adonis fitness members.

To make a decision whether the proposed hypothesis is accepted or rejected, it is defined as follows: H_0 : There is no difference in the effect of pyramid set method with drop set on arm and chest muscle hypertrophy of Adonis fitness members, H_a : there is a difference in the effect of pyramid set method with drop set on arm and chest muscle hypertrophy of Adonis fitness members.

Decision-making criteria test hypotheses by comparing probability (p) with $\alpha = 5\%$. The decision criteria are as follows: (1) if $p > 0.05$ then H_0 is accepted and H_a is rejected; (2) if $p < 0.05$ then H_0 is rejected and H_a is accepted. The overall results of the hypothesis test are summarized and presented in the following table:

Table 9. Summary of the Independent Test t test of arm muscles

Variabel	Mean df	P(sig.)	Information
Pyramid Set	1,3500	0,038	Signifikan
Drop Set	1,8000		

Table 10. Summary of Independent Test t test chest muscles

Variabel	Mean df	P(sig.)	Information
Pyramid Set	1,2500	0,007	Signifikan
Drop Set	1,9500		

From the two tables above, it is known that the probability values p (sig.) of 0.038 and 0.007 turned out to be $p(0.038) < 0.05$, and $p(0.007) < 0.05$; thus H_0 is rejected and H_a is accepted; so it can be concluded that there is a difference in the effect of weight training between the pyramid set method and drop set on arm and chest muscle hypertrophy in Adonis fitness members. Based on the average statistics (mean), the average increase in muscle hypertrophy

The arms in the drop set group were higher at 1.8000 than the average increase in arm muscle hypertrophy in the pyramid set group of 1.3500. Based on mean statistics, the average increase in chest muscle hypertrophy in the drop set group was higher at 1.9500 than the average increase in chest muscle hypertrophy in the pyramid set group of 1.2500. It can be concluded that weight training with the drop set method is more effective in increasing arm and chest muscle hypertrophy than the pyramid set method.

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DISCUSSION

The effect of pyramid set weight training on arm and chest muscle hypertrophy of Adonis fitness members. The application of the pyramid set weight training method in research subjects is in accordance with the principles of good and correct exercise for muscle hypertrophy programs with intensity from light to heavy loads of maximum load, it provides stimulation to the muscles trained, namely the arms and chest. This is reinforced by the results of this study. Based on the results of the data, it is known that there is an effect of pyramid set weight training method on muscle hypertrophy of Adonis fitness members with a significant level of 0.0000 in the arm muscles and a significant level of 0.0001 in the chest muscles. The effect of weight training drop set method on arm and chest muscle hypertrophy of Adonis fitness members. Based on the results of data analysis, it is known that there is an effect of weight training using the drop set method on arm and chest muscle hypertrophy in Adonis fitness members. This can be seen from the significant value of $0.000 < 0.05$ in the arm and chest muscles. Increased hypertrophy of arm and chest muscles may occur due to the implementation of weight training drop set method according to the correct principle of weight training. The weight training method with the drop set method is carried out from light loads to heavy loads which are then done again in reverse without rest, causing muscle stimulation or muscle contraction more maximally in the muscles trained.

CONCLUSIONS

The difference in the effect of weight training methods between pyramid set and drop set methods on hypertrophy of Adonis fitness members' breastarm muscles. The results of data analysis showed that p values of $0.038 < 0.05$ for arm muscles and p values of $0.007 < 0.05$ for pectoral muscles, which means that there is a difference in the effect of weight training methods between pyramid sets and drop sets on muscle hypertrophy. Based on the results of the data analysis, it is known that the drop set weight training method is more effective than the pyramid set method in increasing muscle hypertrophy of Adonis fitness members. The difference in influence can occur due to the characteristics of the two different training methods. Implementation The drop set training method is carried out with weights from light to heavy with an intensity of 70-80% of the maximum load which is then carried out in reverse additional sets from the heaviest to light loads according to the core set without rest until it fails positively or is unable to lift the load with the correct movement every drop in weight. This is also in accordance with one of the principles of overload training, by adding sets in reverse and without pause / istirahat, making the muscles forced to perform maximum contractions, so that the performance of the muscles trained will make contractile proteins in the muscles will increase in size due to the increase in actin and myosin in myofibrils which makes muscle hypertrophy occur. research conducted to find out the effectiveness of weight training with pyramid set and drop set methods on muscle hypertrophy in members of adonis fitness cafe in yogyakarta concluded that there is a significant effect of weight training with the pyramid set method on muscle hypertrophy of adonis fitness members and there is a significant effect of weight training with the drop set method on muscle hypertrophy of adonis fitness members and there are differences in the influence of the method weight training between pyramid set and drop set on muscle hypertrophy of adonis fitness members, which results the drop set method has a more significant influence than pyramid set method on muscle hypertrophy of adonis fitness members. these findings can certainly be used as a reference in choosing a method in supporting someone to achieve the expected.

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