

The Influence of Training and Motivation on Body Fat Percentage of Medan Tribe Fitness Members

Roni Sinaga ⁽¹⁾

Early Childhood Education Programs
State University of Medan
Medan, Indonesia
ronisinaga@unimed.ac.id

Sabaruddin Yunis Bangun ⁽²⁾
Sports Science
State University of Medan
Medan, Indonesia

Zulfikar Ilham ⁽³⁾

Physical Education and Health Recreation
State University of Medan
Medan, Indonesia

Abstract—This study aims to: (1) determine whether there is a difference between aerobic interval training with aerobic continuous training in lowering body fat percentage members of medan tribe fitness, (2) determine whether there is an interaction between exercise and motivation to exercise on body fat percentage (3) determine differences in the effect of aerobic interval training with aerobic continuous training in lowering body fat percentage on members who have high motivation to exercise, and (4) determine differences in the effect of aerobic interval training with aerobic continuous training in lowering body fat percentage on members who have low motivation to exercise. This research was conducted at Tribe Fitness terrain is located at street H. Zainal Arifin No. 7, Medan (sun plaza mall Lt. 4) in 2019. The research was an experiment by level 2x2 design with a sample of 24 people. The results showed that: (1) overall there is a difference between aerobic interval training and aerobic continuous training in the lower levels of body fat percentage, (2) there is an interaction between exercise and exercise motivation to decrease body fat percentage, (3) for members who have the motivation High exercising, giving aerobic interval training gives a better effect than the aerobic continuous training in lowering body fat percentage, (4) for members who have the motivation to exercise is low, giving aerobic continuous training gives a better effect than the aerobic interval training in lowering body fat percentage.

Keywords: *exercise, motivation, body fat percentage*

I. INTRODUCTION

Sport is a physical activity that is often used to maintain physical fitness, one of the problems that interfere with human health is the accumulation of excess fat in the body which can later affect body fat percentage. In simple terms this accumulation of fat occurs because the calories consumed by the body are greater than the calories burned by the body, to increase the burning and prevent the accumulation of excess fat, we must be able to regulate incoming calories and calories burned to be balanced. In reducing body fat percentage it is better to apply exercises that use aerobic energy system

because in that system fat will burn, besides that motivational factors also affect the decrease in body fat percentage. Based on factors that influence a person in reducing body fat percentage, the researcher wants to research to find out what exercises are most appropriate for reducing body fat percentage by considering motivational factors. For the general public, it can be a useful input for reducing body fat percentage. For trainers or instructors, it can be a reference material to choose the appropriate training in reducing body fat percentage. The exercise referred to in this study is Aerobic Continuous Training and Aerobic Intervals Training by looking at high and low motivational factors in exercising.

Aerobic interval training is an exercise that uses a training period where the intensity is determined based on the target heart rate (80% to 85% of the Maximum Heart Rate) and involves periods of rest that are carried out with more relaxed activities such as walking so that the heart rate can drop to 65%, This exercise is usually done with running activities for a certain time and then interspersed with active break, but in fact, this exercise can be adjusted and adapted by choosing a motion activity that suits the purpose of the exercise.[1][2][3]

Aerobic continuous training is a prolonged exercise with an intensity of 60% to 80% of Vo2 Max, stable at the intensity, and at least meets the threshold of intensity of the exercise to obtain physiological adaptation of this exercise is usually done within one hour, this exercise is done with certain stages, namely: warm-up, core training, cooling. During doing this exercise the body will try to maintain the determined intensity of exercise and the body will move long enough.[4][3][5]

Motivation is something that encourages someone to do, do something the behavior according to what he wants. This means that the higher the motivation of a person, the greater the success of someone to reduce the percentage of body fat.[6]

II. METHOD AND RESULTS

The effect of exercise and sports motivation on body fat percentage, methodologically, is a research that can be classified into experimental research types because the analysis

is conducted to see the difference in effect between two treatments on independent variables, in this study analyzed the difference between aerobic interval training and aerobic continuous training connected with high and low motivation to exercise in reducing body fat percentage, to determine the effectiveness of the exercise it is necessary to measure body fat percentage before and after treatment, while to see the level of motivation to exercise do the test by giving a questionnaire.

The objects in this study were members of celebrity fitness who had a target to reduce fat by 45 people. The instrument used in this study was an instrument developed by researchers in the form of a questionnaire about sports motivation and was validated by conducting trials and expert validity, while measurements made on body fat percentage were carried out using the TANITA BC-418 Segmental Body Composition Analyzer. The data collected in the form of initial measurement data and final measurement data, the two data are seen how big the difference is and proceed with the normality and homogeneity test, after doing the test the ANAVA test is carried out followed by the Tuckey test [7].

Research results and discussions obtained by researchers during conducting research consisting of a description of data, testing prerequisite analysis, and hypothesis testing. Data on body fat percentage are grouped by type of exercise (aerobic interval training and continuous aerobic exercise) and motivation to exercise, these data are needed in the following table.

TABLE I. SUMMARY OF DATA ON BODY FAT PERCENTAGE

Variabel	Training		
	Aerobic Interval	Aerobic Continuous	
Motivation	High	n=6 $\bar{X} = 5,88$ $\sum x = 35,30$ $\sum x^2 = 207,82$ SD=0,17	n=6 $\bar{X} = 5,13$ $\sum x = 30,76$ $\sum x^2 = 163,49$ SD=0,19
	Low	n=6 $\bar{X} = 5,22$ $\sum x = 31,31$ $\sum x^2 = 157,88$ SD=0,18	n=6 $\bar{X} = 5,51$ $\sum x = 33,03$ $\sum x^2 = 181,89$ SD=0,11
Total	N = 12 $\bar{X} = 5,55$ $\sum x = 66,61$ $\sum x^2 = 356,70$ SD=0,38	N = 12 $\bar{X} = 5,32$ $\sum x = 63,79$ $\sum x^2 = 345,27$ SD=0,25	

Normality and homogeneity tests are standard procedures in statistics, tests are carried out at a significant level = 0.05. The results of normality and homogeneity tests show normal and homogeneous data distribution. Normal data and homogeneity can proceed to the next step, namely two-way analysis of variance (ANOVA), summary analysis of variations, read the following table.

TABLE II. SUMMARY OF ANOVA TEST RESULTS FOR PERCENTAGE BODY FAT

Source of Variation	df	Sum of Squares	Mean Square	F _{ratio}	P _{value}
Factor A	1	0.33	0.33	12.393*	4.35
Factor B	1	0.12	0.12	4.653*	4.35
Interaction	1	1.64	1.64	61.379*	4.35
Error	20	0.53	0.03		
Total	23	2.62			

III. DISCUSSION

Before Based on testing the research hypothesis using a statistical test it was found that all proposed hypotheses had been tested and showed statistically significant differences, Aerobic interval training is better than continuous aerobic training in reducing overall body fat percentage. this is supported by the benefits provided by aerobic interval training, where this exercise gives greater intensity of exercise and affects muscle mass thereby reducing body fat percentage. After testing the second hypothesis, it was found that there is an interaction between exercise and motivation to exercise at body fat percentage.

Highly motivated members found a significant difference between aerobic interval training and aerobic continuous training on decreasing body fat percentage where aerobic interval training was better because highly motivated members felt very challenged to complete a more intensity exercise While members who have low sports motivation find that continuous aerobic exercise is better at reducing body fat percentage compared to aerobic interval training because members feel that exercises that are not too strenuous are easier to do.

IV. CONCLUSION

Based on the results of the analysis and testing of hypotheses on the dependent variable namely body fat percentage and independent variables namely exercise (aerobic interval training and aerobic continuous training) and motivation to exercise (high and low), conclusions can be obtained in the form of (1) Overall there are differences between aerobic Interval training and aerobic continuous training reduce body fat percentage, (2) There is an interaction between exercise and motivation to exercise on body fat percentage. (3) For members who have high motivation to exercise, giving aerobic interval training gives a better effect compared to continuous aerobic training on reducing body fat percentage. (4) For members who have low motivation to exercise, the provision of aerobic continuous training gives a better effect than aerobic interval training on decreasing body fat percentage percentage.

REFERENCES

- [1] T. O. Bompa and G. G. Haff, *Periodization: Theory and Methodology of Training*. 2009.
- [2] J. H. Wilmore, D. L. Costill, and G. W. Gleim, "Physiology of Sport and Exercise," *Med. Sci. Sport. Exerc.*, 1995, doi: 10.1249/00005768-199505000-00024.
- [3] J. Tangkudung and W. Puspitorini, *Kepelatihan Olahraga*. jakarta: Cerdas Jaya, 2012.
- [4] W. D. McArdle, F. I. Katch, and V. L. Katch, *Essentials of exercise physiology: Fifth edition*. 2015.

- [5] V. Heyward and A. Gibson, "Advance Fitness Assessment & Exercise Prescription," *Adv. Fit. Assess. Exerc. Prescr.*, 2014.
- [6] S. W. Sarwono, "Pengantar psikologi umum," *Yogyakarta: Rajawali Pers*. 2005, doi: 10.4108/icst.simulator.to.ols.2013.251743.Geier.
- [7] Z. Rahman, *Pengantar Statistika*. 2016.