

The Effect of Zumba and High Impact Aerobic in Reducing Skinfold Thickness

N.W. Kusnanik¹

Faculty of Sport Sciences
Universitas Negeri Surabaya
INDONESIA
niningwidyah@unesa.ac.id

Corresponding authors:
niningwidyah@unesa.ac.id

T.J. Suminar²

Faculty of Sport and Health
Universitas PGRI Banyuwangi
INDONESIA
suminarjanjang@gmail.com

S.P. Bird³

School of Exercise Science,
Sport and Health
Charles Sturt University
Bathurst New South Wales
AUSTRALIA
spb@stephenbird.co

Abstract— Zumba and high impact aerobic is a popular training method that can be used to reduce body fat and skinfold thickness. The main aim of the research was to find the significant effect of zumba and high impact aerobic in reducing skinfold thickness. This study was conducted at 30 female members of Jivi Sport and divided into 3 groups with 10 subjects each group. Group 1 was given high intensity aerobic, group 2 zumba, and group 3 conventional exercise 3 times/week during 8 weeks training period. This study was quantitative with matching only design. Data was taken from measurement of skinfold thickness using skinfold caliper at pretest and posttest at 4 skinfold site: triceps, biceps, subscapular, and suprailiaca. Data was analyzed using t test (paired t-test). Result of this study showed that there was a significant decreased of skinfold thickness using zumba and high impact aerobic with $p < 0.05$. **Conclusion:** zumba and high impact aerobic can be used to reduce skinfold thickness.

Keywords: aerobic, zumba, high impact, exercise, skinfold thickness

I. INTRODUCTION

Physical health is a person's ability to convey physical activities that require strength, endurance and flexibility. The element that affects physical health is cardiorespiratory endurance. Cardiorespiratory endurance is the functional capacity of organs including heart, lungs and blood vessels to work optimally in a rest state and exercise in getting oxygen and then circulating oxygen to tissues used in the body's metabolic processes. Exercise is activities of body to do some movements including walking, jogging, running, jumping, swimming, dancing and so on in order to maintain and have better physical fitness. Physical activities must be planned properly, and done repetitively. Physical fitness

is a set of attributes that are either health- or skill-related. Physical exercise is vital for a healthy life and has several positive influences on the body. On the other hand, physical inactivity adversely influences body weight and is associated with obesity [1]. In addition, exercise is an organized process where body and mind are continually defied with the pressure from various volumes (quantity) and intensity [2]. There are two kinds of physical exercise, such as aerobic and anaerobic training. Aerobic exercise is an exercise that helps the heart and lungs work harder to supply muscles with oxygen, for example aerobics, running, swimming and cycling. Aerobics is brief exercises that do not require the used of oxygen to replenish fuel, for example: lifting weights and running short distances. Many sports can help maintain physical conditions, such as swimming, jogging, cycling, aerobic dance and zumba.

Zumba and high impact aerobic are physical activities that are currently preferred by teenagers and adult women. Aerobic high impact is one of the exercises consisting of strength training and routine stretching to improve all the elements of fitness (flexibility, muscle strength, and cardiovascular fitness) according to. Aerobic high impact is usually done in classes that have been trained with the aim of increasing the intensity of exercise with the rhythm of music with a faster tempo. Zumba is a combination of a sports movement with a new dance featured a combination of music and dance. In addition, Zumba is acknowledged as a fun way to exercise and is beneficial in improving cardiovascular fitness. Furthermore, Zumba can help to reduce the skinfold thickness and body mass. Therefore, the purpose of this study is to compare between high impact aerobic and Zumba exercise in decreasing skinfold thickness of active females.

II. METHODS

This type of study was a quantitative experimental (quasi) methods. Design of the reserach was Matching Only Design. The research was conducted at 30 female members of Jivi Sport Fitness. The subjects were divided into three groups using 10 subjects per group. Group 1 was given high intensity aerobic, Group 2 Zumba and Group 3 conventional exercise withduration 3 times/week during 8 weeks training period for 60 minutes in each session. The instrument of this study was skinfold thickness measurement using Skinfold Caliper tool. This tool was equipped with a gauge that will show the thickness of the fat tissue under the skin by pinching using the thumb and index finger approximately 1cm, the distance between the two ends of the calipers' legs that press againts the folds of the skin can be seen in the size recorder. The body parts to be measured were the triceps, biceps, subscapula, and suprailiaca skinfold sites. Data was taken from measuring skinfold thickness at pretest (before being given treatment) and posttest (after being given treatment). T-test method (paired t-test) was used to analysed data statistically.

III. RESULT

The result of this study is presented in Table 1, Table 2, Diagram1, Diagram 2, and Diagram 3.

Table 1. Pretest and Posttest Skinfold Thickness (ml)

Groups	Mean		% Decreased
	Pretest	Posttest	
Group I	26.34	24.71	6.19%
Group II	27.03	25.04	7.36%
Group III	27.91	27.58	4.77%

As clearly seen at Table 1, it indicated that skinfolds thickness decreased in all groups. The mean of skinfold thickness reduced approximately 6.19% decreased at Group 1 after being given treatment of high impact aerobic exercise. In addition, it was 7.36% decreased of skinfold thickness at Group II after exercising zumba with frequency 3 times a week for 8 weeks training periods. Group III also decreased approximately 4.77% after being given conventional exercise. Data of skinfold thickness for pretest and posttest between groups are presented in Diagrams.

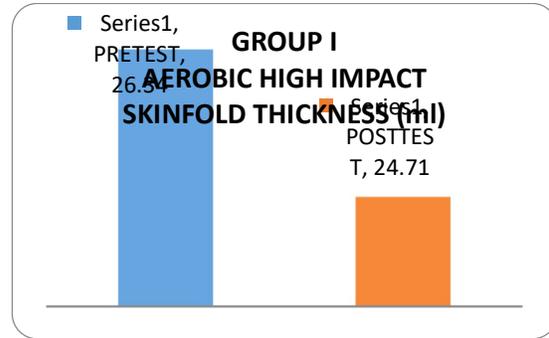


Diagram 1. Pretest and Posttest of Group 1 (High Impact Aerobic)

Based on the Diagram 1, it showed that there was a significant decreased of skinfold thickness after being given high impact aerobic exercise in 8 weeks with 24 times sessions. This was approximately 1.63 ml decreased from pretest (26.34ml) to posttest (24.71ml). Therefore, it was a difference of mean that showed a decreased of skinfold thickness after being given high impact aerobic exercise in 8 weeks with 3 times of frequency per week.

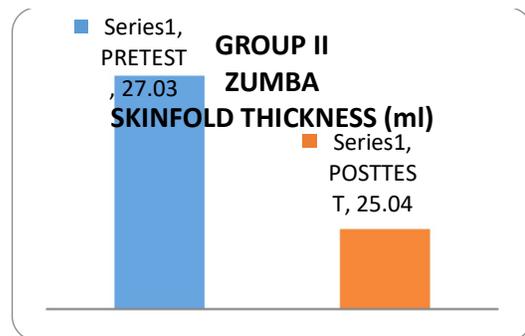


Diagram 2. Data Pretest and Posttest of Group 2 (Zumba Exercise)

As can be seen in Diagram 2 found that skinfold thickness reduced 1.99 ml after being given zumba exercise in 8 weeks with 24 times session from 27.03ml (pretest) to 25.04ml (posttest).

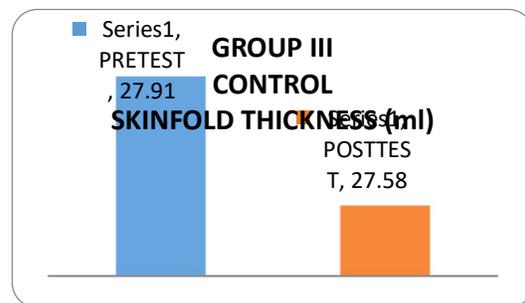


Diagram 3. Data Pretest and Posttest of Group 3 (control group)

As clearly showed in Diagram 3, it indicated that skinfold thickness slightly decreased of 0.33 ml from 27.91ml (pretest) to 27.58ml (posttest).

Table 2. Paired Sampels Test *Sig. (2-tiled)*

Skinfold Thickness (ml)	Mean	Sig. (2-tailed)	Sig.
Group I (High Impact Aerobics)	1.63000	0.002	0,000<0,05 (Significant)
Group II (Zumba)	1.99000	0.001	0,000<0,05 (Significant)
Group III (Control)	1.33000	0.000	0,000<0,05 (Significant)

As the result of analyzing at Table 2, it can be stated that there were significant reduced of skinfold thickness after being given high impact aerobic and zumba exercise with $P < 0.05$.

IV. DISCUSSION

The results of this study are supported by statement that the benefits of doing an aerobic exercise can reduce weight and regulate body weight, improve healthiness and endurance [3]. Aerobic high impact is a series of movements that are deliberately chosen by following the rhythm of the selected music that emerges rhythmic tendencies, continuity and a distinctive duration. The advantages of aerobic are able to help in improving the immune system of the body, circulatory conditions and heart workout. This study also supports the theory declared by Aerobic fitness is F.I.T, namely frequency, intensity, and time. The frequency is to get optimal results, it is good to do aerobic exercise 3-5 times per week. Intensity is preferably between 70-80% of maximum heart rate. The duration of the exercise should be gradually increased which is between 20-60 minutes. Other benefits of high impact aerobics are being able to lose weight, improve fitness, improve body coordination, relieve stress, and remain happy. Therefore, the high impact aerobic exercise enhances body fitness and helps improve the fold of fat under the skin [4]. High impact aerobic exercise can affect the increase in VO_2Max and can reduce weight, therefore many women choose high-impact aerobic exercises for fitness activities and help to lose weight [5].

Zumba is a physical activities that inspired from aerobic dance with a strong influence from Latin dances including a fusion of salsa, merengue, reggaeton, cumbia, chachacha, mambo, soca, belly dance, Bhangra, hip hop, flamenco, samba and

tango [5]. Zumba is a kind of dance workout that inspired from Latin American music and dances [6]. Zumba Exercise combines between the basic of reggaeton, dance cumbia, salsa, samba, merengue, tango and others from Latin American dances. The movement of zumba not only use aerobic steps basic, but also enriches the composition using other dances such as African dance, Indian, hip-hop, belly dancing, and so on.

Zumba includes dances that can burn calories and body fat quickly because the movements of Zumba use cardio exercise including jump, spin, and move quickly. Zumba can build 369 calories around 9.5 kcal per minute. With Zumba training three times a week can be obtained in one month lose 3kg of weight. Aerobic exercise that done for 60 minutes can decrease fat folds under the skin and lose body mass [7]. The motivation of many women in doing exercise is to lose body weight, 28 and a good way in order to achieve this objective anecdotally evidence suggests that is Zumba [8]. Zumba exercise can reduce skinfold thickness than aerobic exercise [9]. The training of Zumba physical fitness that have conducted in 8 weeks training periods had a significant effect in decreasing in percentage of body fat's young females [10].

Under-fat skin is an influential thing in the body, if the fat content is balanced then it is good for the health of the body, therefore by doing aerobic exercise and zumba exercise can help to reduce the thickness thickness. To obtain the skinfold thickness can be taken from 7 skinfold sites including biceps, triceps, supra spaniel, abdominal, subscapular, and high medial front calf [11]. Zumba dance training and high impact aerobics can also reduce weight loss [12]. Therefore, aerobic and zumba are effective to decrease skinfold thickness.

V. CONCLUSION

The conclusion of the research was a significant effect of high impact aerobic and zumba exercise in reducing skinfold thickness. Therefore, it is suggested that high impact aerobic and zumba exercise can be used as an alternative method to reduce skinfold thickness and body mass.

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