SEKOLAH TINGGI KEGURUAN DAN ILMU PENDIDIKAN
PERSATUAN GURU REPUBLIK INDONESIA
STKIP PGRI SUMENEP
Website : www.stkippgrisumenep.ac.id
Jl. Trunojoyo Gedungan Sumenep Telp. (0328) 664094 – 671732 Fax. 671732

SURAT PERNYATAAN PENGECEKAN
SIMILARITY ATAU ORIGINALITY

Yang bertanda tangan dibawah ini atas nama Petugas Check Plagiasi STKIP PGRI Sumenep, menyatakan dengan sebenarnya bahwa karya ilmiah ini telah dilakukan cek dan dinyatakan lolos plagiasi menggunakan Aplikasi Turnitin dengan batas maksimal toloransi 20% atas nama:

Nama : **DIAN HELAPRAHARA, M.Pd., AIFMO-P**
NIDN : **072718005**
Program Studi : **PENDIDIKAN JASMANI KESEHATAN DAN REKREASI**

No	Judul	Jenis Karya	Hasil
1	**THE IMPACT OF LOW IMPACT AEROBIC GYMNASTIC ON BODY MASS INDEX AND THIGH CIRCUMFERENCE**	**Artikel**	**17 %**

Demikian surat ini saya buat untuk dipergunakan sebagai mana mestinya

Sumenep, 14 Juni 2023

turnitin
STKIP PGRI SUMENEP

Pemeriksa

artikel_JPJO_UPI_Andi_Fepriyanto.pdf

by Andi Andi

Submission date: 13-Jun-2023 10:28AM (UTC+0700)
Submission ID: 2114954277
File name: artikel_JPJO_UPI_Andi_Fepriyanto.pdf (832.89K)
Word count: 2401
Character count: 12541

JPJO 4 (2) (2019) 204-208

Jurnal Pendidikan Jasmani dan Olahraga

http://ejournal.upi.edu/index.php/penjas/index

The Impact of Low Impact Aerobic Gymnastics on Body Mass Index and Thigh Circumference

Andi Fepriyanto, Dian Helaprahara, Ainur Rasyid

STKIP PGRI Sumenep, Indonesia

Article Info

Article History :

Received March 2019

Revised June2019

Accepted July 2019

Available online September 2019

Keywords :

Aerobic Gymnastics, Body Mass Index, Thigh Circumference

Abstrak

Penelitian ini bertujuan mengkaji senam erobic low impact terhadap index massa tubuh dan lingkar paha pada wanita. Subjek dalam penelitian ini terdiri dari dari perkumpulan ibu-ibu dharmawanita yang diberikan perlakuan senam aerobic low impact selama 6 minggu berjumlah 20 subjek. Penelitian ini menggunakan metode eksperimen sehingga data pre-test diambil sebelum treatmen diberikan dan post-test diambil setelah treatmen kemudian data di analisis. Hasil penelitian menunjukkan nilai t-hitung sebesar (6,26) untuk index massa tubuh dan lingkar paha besar (2,57) sedangkan t-tabel (1,729) sehingga menunjukkan ($p<0.05$). sehingga dapat disimpulkan bahwa latihan senam aerobic low impact secara signifikan dapat menurunkan index massa tubuh dan lingkar paha pada wanita secara bertahap.

Abstract

This study aims to examine the influence of low impact erobic exercises on body mass index and thigh circumference in women. Subjects in this study consisted of 20 female members of Dharmawanita conducting low impact aerobic exercise for 6 weeks. An experimental method was employed in this study, hence pre-test data was taken before treatment and post-test was taken after, followed by data analysis. The results showed the t-value of (6.26) for body mass index and thigh circumference (2.57) , whereas the t-table (1.729) with ($p <0.05$). Thus, it can be concluded that low impact aerobic exercise can significantly reduce body mass index and thigh circumference in women gradually.

Correspondence Address : Jl. Trunojoyo, Kabupaten Sumenep, Jawa Timur , Indonesia

E-mail : andifepriyanto@stkippgrisumenep.ac.id

ISSN 2580-071X *(online)*

ISSN 2085-6180 *(print)*

DOI : 10.17509/jpjo.v4i2.19717

INTRODUCTION

In this globalization era, the advancement of all fields is growing rapidly, hence the patterns of physical work also change. A good number of human work has been replaced by machines, and this makes human have less job and lack active movement. The lack of productivity draws several possible health problems.

In consequence, a number of people look for activities that can make them perform some movement and produce sweats. The forms of physical activities vary from walking, jogging, to cycling. However, the more advancing technology makes people rarely conduct those kinds of activities anymore due to time consuming and eventually they become overweight.

Plenty of methods are employed to solve the overweight problem, from a strict diet, slimming drugs consumption, to performing liposuction surgery. However, the most effective and efficient way to overcome the problem of obesity is to exercise regularly and continuously and consume foods with balanced nutrition. Rather than men, women have a higher percentage of experiencing overweight and obesity. Based on the data that has been taken, the results of body fat percentage measurement show the mean value of body fat percentage of 14.92% in males and 31.31% in females. All research subjects had normal blood pressure (<140/90) and normal resting pulse (<100 beats/min) [Sukamti, Zein, & Budiarti, 2016].

Bodyweight loss can be carried out through mild physical activities or sports with long duration since the main energy used during the exercise are fat. One of the sports with mild intensity is aerobic. Aerobic gymnastics are popular in society due to these following encouragement. It is easy to do individual or group sport activity, can be performed anywhere, and It provides music to motivate.

Aerobic low impact gymnastics focuses on the integration of motion and beats rhythm, hence good for gradual weight loss. People with overweight or obesity should not lose their weight drastically at a time since it will cause side effects, therefore in this study, the measurements of excess body weight for low impact aerobics in women was conducted.

In women, there are special fat tissue deposits which give a feminine feature on the body, for example in the gluteal area (buttocks) and in the shoulder and chest area which are giving rounded contour in those areas. Fat tissue deposits in these specific areas are very persistently maintained by a woman's body. When it is lacking in energy, and only decreases when the energy deficiency is already acute, and when the overweight is reaching 20% of the ideal body weight in their age, here women are very likely to experience obesity (Sediaotama, 2000). Other benefits of exercise include life prolongation, heart nourishment, muscles and bones care, more independence, obesity prevention, anxiety and depression reduction, and higher self-confidence gain (Duwi Kurnianto P, 2015).

In Saronggi sub-district, most of the people rarely walk and are accustomed to using motorbikes and public transportation to go to places or run errands in everyday basis, particularly the housewives who already have a lot of regular activities, thus forget to do sports activities. As a result, most female adults in the Saronggi sub-district experience overweight. The research conducted by Millward, Spinney, and Scott (2014) notes that women who have low aerobic activity are in poor or low health conditions.

METHODS

This study was pre-experimental and employed one group pre-test – post-test design. The merit of this design, by undergoing pre-test and post-test, is that the differences in results due to the treatment given can be identified with certainty (Maksum, 2012).

Population and Samples

The population of this study was all the female members of Dharmawanita in Suronggi sub-district, and a total of 20 females were taken as the research subjects with their consents.

Data Collection Techniques

Data collection began with the participants filling written approval to be subjected in this research and follow all the program to completion. The subjects were also given a briefing about the purpose and benefits of the study.

DOI : 10.17509/jpjo.v4i2.19717

Table 1. The Program of Low Impact Aerobic Exercise

Week	Meetings	Form of Exercise
1	1-3	• Warming up :10 minutes • Core : aerobic with movement variety :25 minutes • Cooling down :10 minutes
2	4-6	• Warming up :10 minutes • Core : aerobic with movement variety:25 minutes • Cooling down : 10 minutes.
3	7-9	• Warming up :10 minutes • Core : aerobic with movement variety :30 minutes • Cooling down : 5 minutes
4	10-12	• Warming up :10 minutes • Core : aerobic with movement variety :30 minutes • Cooling down : 5 minutes
5	13-15	• Warming up : 5 minutes • Core : aerobic with movement variety :35 minutes • Cooling down : 5 minutes
6	16-18	• Warming up :5 minutes • Core : aerobic with movement variety :35 minutes • Cooling down : 5 minutes

Furthermore, the subjects were given the program of low impact aerobic exercises for six weeks. The following details of the program carried out are presented in table 1.

Based on table 1, the frequency and intensity of the program were at different proportion scaffold between the warming-up, the core, and cooling-down activities. The following is the visual documentation of the research treatment conducted at the Suronggi subdistrict office.

Low impact aerobic exercise is a mild form of physical activities for heart fitness and blood circulation, muscles building, and physical endurance, since the duration can be longer than high impact exercises. Aerobics is a series of movements that are chosen deliberately by following the rhythm of the music that is also chosen so as to construct the rhythmic provisions, continuity and in a certain duration.

In this study, the data collection was conducted by using a measurement test to size the weight, height, and thigh circumference. The instrument used to measure weight and height was a weight scale and the circumference of the thigh was measured a measurement tape.

Picture 1. The Research Treatment

The height and weight were measured and used

body mass index (BMI) data to find out whether the research subjects were categorized as obese or not. The measurements in this study were carried out twice, namely pre-test at the beginning taken before the subjects conducted the program and post-test taken after the program.

Table 2. Subject Anthropometry

Anthropometry	Mean
Age	35 ± 4,2
Weight (kg)	61,9 ± 4,84
Height (cm)	156,1 ± 7,83
Body Mass Index (BMI)	25,39

RESULT

Data was taken from subjects before and after conducting the low impact aerobic exercise as listed in table 2. The results of the pre-test show the average body weight of 61.9 ± 4.84 kg, as for post-test results the average was 59.95 ± 4.93 kg. Body mass index (BMI) in the pre-test was 25.39 ± 1.470 while the post-test was 24.59 ± 1.478. The average thigh circumference as per pre-test results was 52.25 ± 6.84 cm, while the post-test on the thigh circumference was on the average of 51.85 ± 6.53cm.

Table 3. Research Result

Research Data (N=20)	Pre-Test	Post-Test
Weight (kg)	61.9 ± 4.84	59,95 ± 4.93
BMI	25.39 ± 1.470	24.59 ± 1.478
Thigh Circumference (cm)	52.25 ± 6.84	51.85 ± 6.53

DISCUSSION

The ideal body weight is different for every person. It depends on the size of skeleton and body composition of muscle and fat. A person who has a large frame and has a relatively large muscle composition has a greater ideal body weight. This is given remission of ± 20%, while more than 30% becomes overweight (obesity).

The relationship between aerobic exercise with bodyweight is very significant, because when someone performs aerobic exercise continuously then that person will experience weight loss, be freed from some potential disease, and their quality of life will be even better. It is in line with what Brick notes that aerobic gymnastics is one of the best ways to reduce one's weight, improve the muscle health, and attain a better quality of life (Lyane, 2002). The similar opinion (Tenório et al., 2018) was that high intensity training (HIT, n = 31) or low intensity training (LIT, n = 31) for 24 weeks, which was given to sixty-two adolescents with obesity (age: 15 – 14 years old, BMI: 34.87 ± 4.22 kg.m-2) resulting in both HIT and LIT that increase the inflammatory profile. However, this study indicated that the amount of biomarkers and the magnitude of changes was higher in HIT compared to LIT.

Furthermore, according to (Duwi Kurnianto P. 2015), to be able to enjoy the old age with a healthy body, people should conduct regular sports activities, carry out a healthy lifestyle, take sufficient rest, not smoking, and undergo health check-ups regularly. One of the best ways to maintain a healthy body in older age is by conducting routine physical exercises. Regular exercise is an effective and safe alternative to improve or maintain physical fitness and health if conducted properly. Besides, the low impact aerobics gymnastics is useful for preventing antioxidants associated with ageing (Bouzid, Hammouda, Matran, Robin, & Fabre, 2014). In a research by Purwanto (2011), it is reported that women who actively perform aerobic exercise have a better physical endurance against potential disease than those who do not. The kinds of aerobic activities suitable for seniors are walking, low impact aerobics, healthy heart gymnastics for elderly, cycling, swimming, and so forth. The success of an exercise on elderly people also depends on the program as planned. The sports activities will be best to conduct when following the principles of FITT concept (frequency, intensity, time, and type).

CONCLUSION

Low impact aerobic exercises affect the decrease in body mass index (bmi) and thigh circumference of the female adults in saronggi sub-district. The results of the study show that the t-count value is greater than t-table values of bmi as well as the thigh circumference, namely (6.26> 1.729) and (2.571> 1.729), thus it can be said that there is a significant difference between the body weight and thigh circumference before and after the program. It means that low impact aerobic exercise significantly influences a person's weight. Aerobic gymnastics can also be performed on a daily basis because the movements are easy to follow.

REFERENCES

Bouzid, M. A., Hammouda, O., Matran, R., Robin, S., & Fabre, C. (2014). Low intensity aerobic exercise and oxidative stress markers in older adults. Journal of Aging and Physical Activity, 22(4), 536–542. https://doi.org/10.1123/JAPA.2013-0037

Duwi Kurnianto P. (2015). Menjaga Kesehatan di Usia Lanjut. Jurnal Olahraga Prestasi, 11(2), 19–30.

Lyane, B. (2002). Bugar dengan senam aerobic. Jakarta: PT Raja Grafindo.

Maksum, A. (2012). Metodologi Penelitian dalam Olahraga. Surabaya: Unesa University Press.

Millward, H., Spinney, J. E. L., & Scott, D. (2014). Durations and domains of daily aerobic activity: Evidence from the 2010 Canadian Time-Use Survey. Journal of Physical Activity and Health, 11(5), 895–902. https://doi.org/10.1123/jpah.2012-0115

Purwanto. (2011). Dampak Senam Aerobik terhadap Daya Tahan Tubuh dan Penyakit. Jurnal Media Ilmu Keolahragaan Indonesia, 1, 2088–6802.

Sediaotama, D. A. (2000). Ilmu Gizi. Dian Rakyat.

Sukamti, E. R., Zein, M. I., & Budiarti, R. (2016). Profil Kebugaran Jasmani Dan Status Kesehatan Instruktur Senam Aerobik Di Yogyakarta. Jurnal Olahraga Prestasi, 12(2), 41–60.

Suyadi. (2012). Buku Panduan Guru Profesional Penelitian Tindakan Kelas (PTK) dan Penelitian Tindakan Sekolah (PTS) (Andi, ed.). Yogyakarta.

Tenório, T. R. S., Balagopal, P. B., Andersen, L. B., Ritti-Dias, R. M., Hill, J. O., Lofrano-Prado, M. C., & Prado, W. L. (2018). Effect of low-versus high-intensity exercise training on biomarkers of inflammation and endothelial dysfunction in adolescents with obesity: A 6-month randomized exercise intervention study. Pediatric Exercise Science, 30(1), 98–107. https://doi.org/10.1123/pes.2017-0067

artikel_JPJO_UPI_Andi_Fepriyanto.pdf

ORIGINALITY REPORT

17%	17%	6%	7%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.researchgate.net Internet Source	8%
2	Submitted to Universitas Pendidikan Indonesia Student Paper	2%
3	ejournal.upi.edu Internet Source	1%
4	doaj.org Internet Source	1%
5	Submitted to CSU, Long Beach Student Paper	1%
6	K Agustini, D S Wahyuni, I N E Mertayasa, N K Wedhanti, W Sukrawarpala. "Student-centered learning models and learning outcomes: meta-analysis and effect sizes on the students' thesis", Journal of Physics: Conference Series, 2021 Publication	1%
7	id.123dok.com Internet Source	1%

8	www.scribd.com Internet Source	1 %
9	ojs.unpkediri.ac.id Internet Source	<1 %
10	Xuan Mi, Meng Zhang, Guoli Zhang. "The Effect of Physical Activity on State of Mind: The Mediating Role of Mental Resilience duringthe COVID-19Pandemic", Research Square Platform LLC, 2023 Publication	<1 %
11	ejurnal.stieipwija.ac.id Internet Source	<1 %
12	journal.ipm2kpe.or.id Internet Source	<1 %

Exclude quotes	On	Exclude matches	Off
Exclude bibliography	On		