

EFFECT OF AQUAEROBIC EXERCISE ON BODY WEIGHT OF THE OVERWEIGHT DURING MENOPAUSE

WADEE PRAMKRATOK

Faculty of Science and Technology Department Sports Science and Health, Suan Sunandha Rajabhat University, Thailand
E-mail: wadee.pr@ssru.ac.th

Abstract - The aim of the present study was to evaluate and determine the effects of 6 weeks of aquaerobic exercise on body weight of the overweight in during menopause. This study was conducted with the voluntary participation of 24 menopausal women who are overweight, age 45–59 years. The sample consisted exercise group ($n = 12$) and control group ($n = 12$). In this study, the exercise group was given a 30-minute aquaerobic exercise 4 times a week for 6 weeks. Before and after training, body weight, body mass index and body fat percentage was measured. T-test and paired t-test were used for analysis. The results showed that body weight exercise group decreased significantly when compared with the non-exercise group, whereas body weight, body mass index and body fat percentage. There were significant improvements in menopausal women who are overweight and after aquaerobic exercise 4 times a week for 6 weeks.

Keywords - Overweight during menopause/ Aquaerobic exercise/ Body weight

I. INTRODUCTION

Health is important and necessary for all life. To live is normal to keep the be happiness, satisfied, fulfillment, fulfillment of both themselves and others. Those who are healthy will perform daily Whether studying or working, with great efficiency. Both our health is completely normal and good. At present, it is recognized that the known health care is very important to help live with peace and good quality for women who are postmenopausal women aged 45-59 years, approximately [1] and the old age is also very important to the family and society. Because some would oblige the job. Many women claim that they gain weight during and after menopause. The exercise has influence on them because exercise causes changes in body weight in early menopause [2], the exercise can be reduced overweight in menopausal women. Similar to research [3] studied the effect of aerobic exercise on physical fitness of women after menopause. The reduction of body mass index, body weight, body fat percentage, heart rate, blood pressure from exercises from 12-24 days per week, three times for 55 minutes. Have positive effects on menopausal women's physical fitness and the reduction of the problem. In menopausal most people still think the deterioration of the body is likely to occur when elderly or menopause. Indeed, our body begins to age deterioration from age 30 years, the decline of the body is slower or faster depending on many factors that affect the strength of the body, for example, congenital disease, lifestyle and health behavior include: eating, diet, rest, exercise, employment, economic, environmental, and public policies that affect health [4]. The effect of controlling health behavior maybe cannot stop the decline to a standstill but it can slow down aging People are living longer and better quality of life. In the current exercise, the sport is becoming widely popular due to people more attention to whether children or adults

they turn to exercise more, that may be make myself healthy, body does not get sick easily and asymmetrical shape. The exercise It is useful for all people and all ages, but the lack of well prepared, it could cause problems or complications as a consequence.

Exercise in water Another form of the female menopause [5], explain the properties of water to give beneficial exercises such pressure on the water pressure while the water will be the flow of blood back to the heart more easily than on land. In addition, water has caused the buoyancy of the water.

Researchers have recognized the importance of the above, realize that exercise is an important factor for postmenopausal women who have lost weight by exercising in water. Due to weight gain after menopause, the researchers conducted an experiment in participants exercise weight in water by aquaerobic exercise. Menopausal women are likely to benefit education and guidance on the information that was used to develop physical fitness and quality of life. Evaluation of body weight of the overweight during menopause can be improved by participating in aquaerobic exercise programs. It will be useful to study the effects of physical fitness and aquaerobic exercise programs on menopausal quality of life, and to develop guidelines from these findings. The purpose of this study was to determine the effect of compare for 6 weeks aquaerobic exercise on body weight of the overweight in during menopause

II. DETAILS EXPERIMENTAL

2.1. Materials and Procedures

The format of the research study, the experimental group and control group was divided into two groups: the experimental group and the control groups were 12 people in each group will receive useful information and beware of aquaerobic

exercise, before giving its written consent to participate in research. In figure 1 show before and after two groups design. The first, the trial will evaluate the results before training to aquaerobic exercise. Second, has training every Monday, Tuesday, Thursday, Saturday from 18:00 to 19:00 hrs. From the leader in aquaerobic exercise. By aerobics, 30 minutes of continuous music with a tempo of 70 beats per minute for experimental group, and the control group was not received training to aquaerobic exercise but they can in normal activities such as sweeping home cooking etc. and finally the trial will evaluate again the results after training to aquaerobic exercise.

Each group can have on a daily basis as a measurement and evaluation of body weight, body mass index and body fat percentage. The results were analyzed by measuring before and after training, body weight, body mass index and body fat percentage was measured. T-test and paired t-test were used for analysis.



Fig.1 Before and after training two groups design

2.2. Before and after training test

Testing was conducted before and after training period of 6 weeks as follow body weight, Body fat percentage, Body mass index: Omron analysis by Omron Healthcare, Inc. In the research used t-test and, pair t-test was performed to determine the difference in the experimental and the control groups of body weight before and after the experiment and after that analyzed statistically.

Statistic: All data were analyzed by using SPSS for window. The statistical were by comparing the mean and standard deviation of each parameter before and after experiment. The t-test was performed to determine the difference between the group in the experimental and the control groups of physical fitness before and after the experiment and, pair t-test was performed to determine the difference within experimental and the control groups with a significant level of .05.

Table 1: Comparison of body weight, body mass index and body percentage between the experimental and control groups by show of mean and standard deviation before experiment

Parameter	Experimental	Control	P-value
Body weight (kg.)	69.32±2.50	70.18±2.03	.366
Body mass index (kg./m ²)	25.45±0.93	25.78±0.75	.277

Parameter	Experimental	Control	P-value
Body fat percentage	32.21±1.33	32.73±0.95	.357

Significant difference between groups *p<.05,**p<.01

Table 2: Comparison of body weight, body mass index and body percentage between the experimental and control groups by show of mean and standard deviation after experiment

Parameter	Experimental	Control	P-value
Body weight (kg.)	66.08±2.43	70.36±	.000**
Body mass index (kg./m ²)	24.27±0.89	25.84±	.000**
Body fat percentage	29.11±2.39	32.70±	.000**

Significant difference between groups *p<.05,**p<.01

Table 3: Comparison of body weight, body mass index and body percentage within of the experimental and control groups by show of mean and standard deviation before and after experiment

parameter	Experimental			Control		
	Pre	Post	P-value	Pre	Post	P-value
Body weight (kg.)	69.32	66.08	.000**	70.18	70.36	.192
Body mass index (kg./m ²)	25.45	24.27	.000**	25.78	25.84	.189
Body fat percentage	32.21	29.11	.000**	32.73	32.70	.720

Significant difference within group *p<.05,**p<.01

III. RESULTS AND DISCUSSION

3.1 Comparison of body weight, body mass index and body percentage

From the study, the researcher presents data analysis of the changing results of body weight, body mass index and body fat percentage before and after the aquaerobic exercise program, held for 6 weeks with voluntary participation of 24 overweight during menopausal women divided into experimental (n=12) and control (n=12) groups, age 45-59 years. T-test and pair t-test were used analyze by show of mean and standard deviation according to the following changes:

Comparison of body weight, body mass index and body fat percentage between the experimental and control groups by show of mean and standard deviation before experiment differences between the experimental and control groups were not significant. Therefore, this is an appropriate sample of the research is show in table 1. In table 2 find body weight, body mass index and body percentage between the experimental and control groups by show

of mean and standard deviation after experiment of experimental group were significantly less than at the level .01 better than when compared with the control group.

Finally, in table 3 finds that the body weight, body mass index and body percentage of within the experimental group increased significantly less than at level .01 when compared with before experiment, but of the within control group was not significant in body weight, body mass index and body percentage.

3.2. Reasons for change after aquaerobic exercise

The aquaerobic exercise exercise 4 times a week for 6 weeks, and the intensity of exercise at 50-70 % maximum heart rate for comparison of changes of body weight, body fat percentage and body mass index, according to the hypothesis. Data were analyzed between groups and showed mean and standard deviation to following:

The effect of body weight after aquaerobic exercise for six weeks already, the experimental group showed a body weight decreased from 69.32 to 66.08 kilogram, compared to the control group, the body weight has increased from 70.18 to 70.36 kilogram. Body weight of the experimental group were decreased because there might be the aquaerobic exercise four times a week is moderate, about 45 minutes able to reduce the body weight. Because when exercising continuously for 30 minutes or longer physically able to extract energy from glycogen and fat to use as energy during exercise [6].

Of body fat percentage, aquaerobic exercise for six weeks. It was found that the percentage of body fat decreased by 32.21% to 29.11% in experimental group compared with the control group. The control group was body fat percentage from 32.73% to 32.70% but not significant. Because body fat is eliminated from the body through exercise continuously for at least 30 minutes in order to encourage the use of energy from fat stored in the body. Causing a decrease in body fat. This is consistent with research [7] showed a decrease in body fat percentage of female menopausal after a workout of aerobics.

The effect of BMI after aquaerobic exercise for six weeks already. The experimental group was 25.45 to 24.27 kg/m² which decreased significantly less than at the level .01, compared to the control group. Due to exercise for 25 minutes then stimulates the metabolism of the body [8]. This is consistent with the research [9] found that the decrease in body mass index after Tai Chi exercise.

So, workout with aquaerobic exercise, the body weight is reduced, which is beneficial to the body when aquaerobic exercise at low to moderate levels for a period of about 30 minutes to 1 hour, 3-4 times a week will result in body weight loss. Because the energy from fatty acids and glucose in the blood into energy to glycogen and fat which accumulate in the muscles are gone.

CONCLUSIONS

This research study to analyze the effects of aquaerobic exercise on body weight of the overweight during menopause after aquaerobic exercise, 4 times a week for 6 weeks for comparison of changes of body weight, body fat percentage and body mass index with the voluntary participation of 24 overweight in during menopause, age 45-59 years divided into experimental (n = 12) and control (n = 12) groups. To analyze data using SPSS for window, data were analyzed between groups used t-test and within group used paired t-test by showed mean and standard deviation before experiment with a significant level 0.05 ($p < 0.05$). There was studied conclusions are as follows:

Comparison the mean and standard deviation were significant improvements for body weight, body fat percentage and body mass index in menopausal women who are overweight and after aquaerobic exercise 4 times a week for 6 weeks. Therefore, aquaerobic exercise could improve menopausal health.

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