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Effects of Aerobic Training and Zumba Training on Physical Fitness Variables of Middle Age Obese Women

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Abstract

The purpose of the study is to analyze the effect of aerobic training and Zumba training on physical fitness variables of middle age obese women. To achieve the purpose thirty female participants (n=30, females) housewives' were included in this study. All participants were eligible for inclusion in this study on the basis of their pre-medical record. Their age ranged from 30 to 40 years. Participants were randomly allocated into two groups namely aerobic training group (N=15) and Zumba training group (N=15). Additionally an inform consent was obtained from the participants. The following criterion variables were selected for the study such as cardio respiratory endurance, abdominal strength and flexibility. The training period would be the six weeks except Sunday of every week. The aerobic training group underwent twelve weeks of aerobic training, while the Zumba training group underwent twelve weeks of zumba training. Outcomes were measured at baseline and after the 12 weeks of intervention. The data were collected before and after the training period and the pretest, posttest were analyzed by 't' ratio. The level of significance for the study was chosen as 0.05. It is concluded that the physical fitness variables namely cardio respiratory endurance, abdominal strength and flexibility are significantly improved due to aerobic training. It is also concluded that the physical fitness variables namely cardio respiratory endurance, abdominal strength and flexibility are significantly improved due to zumba training.

Keywords: Aerobic Training, Zumba Training, Cardio Respiratory Endurance, Abdominal Strength, Flexibility.

Introduction

Aerobics refers to the group exercise classes that are generally high impact, high intensity set to music which are designed to increase the fitness and burn fat. "Aerobics are a particular form of aerobic exercise. Aerobics classes generally involve rapid stepping patterns, performed to music with cues provided by an instructor. The benefits of aerobic exercise are myriad. They include systemic changes such as reduced cholesterol and blood pressure, improved muscular endurance, reduced body fat, increased metabolism, to name a few. Aerobic activities strengthen the heart and lungs, making them more efficient and durable, improving quality and quantity of life. Exercise not only extends the life, but also gives more energy to live it to the fullest. Aerobic exercise improves the strength of bones, ligaments and tendons, allows the body to use fats and sugars more efficiently, burns lots of calories and plays an important role in reducing the onset and symptoms of aging and illness. Aerobic exercise reduces the risk of heart disease, vascular disease and diabetes and improving lung functions. (Kathleen Ekdahl, 2006).

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The health benefits of women's participation in physical activity and sport are now well established. Participation in sport and physical activity can prevent myriad non communicable diseases which account for over 60 percent of global deaths, 66 percent of which occur in developing countries (WHO, 2007). For girls, it can have a positive impact on childhood health, as well as reduce the risk of chronic diseases in later life. For older women, it can contribute to the prevention of cardiovascular diseases, which account for one third of deaths among women around the world and half of all deaths among women over 50 in developing countries (WHO, 2007). Alberto 'Beto' Perez, a celebrity fitness trainer, developed a variation of aerobic dance called "Zumba". One day in the mid-90s, Beto reportedly forgot to bring his regular aerobics-style music tape to the group exercise class he was leading. With no music and a class to teach, he raced back to his car and scrounged up a cassette tape of Latin dance music. As the lively beats of Merengue and Rumba rang out, Beto drew upon his experience dancing in Salsa clubs and choreographing for local artists. Soon he was leading his pupils through a fun series of dance steps and Rumbacize was born. It was an instant hit, and quickly became the most popular class at his gym. In 1999, Beto brought Rumbacize with him when he moved to Miami. It immediately caught on there as well and, with the help of a pair of

entrepreneurs, Beto rebranded his class and transformed it into the global franchise which is the Zumba of today. House wife's also needed to experience physical activity. Some Women may have developed limited lung capacity, muscle tone, posture, and a tendency to become overweight. A regular physical activity program will improve fitness and give the Women confidence to do aerobic activity lifelong.

Methodology

The purpose of the study is to analyze the effect of aerobic training and Zumba training on physical fitness variables of middle age obese women. Thirty female participants (n=30, females) housewives' were included in this study. All participants were eligible for inclusion in this study on the basis of their pre-medical record. Their age ranged from 30 to 40 years. Participants were randomly allocated into two groups namely aerobic training group (N=15) and Zumba training group (N=15). Additionally an inform consent was obtained from the participants. The following criterion variables were selected for the study such as cardio respiratory endurance, abdominal strength and flexibility. The training period would be the six weeks except Sunday of every week. The aerobic training group underwent twelve weeks of aerobic training, while the Zumba training group underwent twelve weeks of zumba training. Outcomes were measured at baseline and after the 12 weeks of intervention. The data were collected before and after the training period and the pretest, posttest were analyzed by 't' ratio. The level of significance for the study was chosen as 0.05.

Table I. Tools and Techniques

Variables	Tests	Units
Cardio respiratory Endurance	1mile run/walk Endurance Test	In seconds
Abominal strength	Sit ups	Counts
Flexibility	Sit and reach test	Inches

Training Program

The 12-week aerobic training programme and zumba training were designed and implemented by the principles of progression during the entire training phase of the study. The well-structured training programmes were implemented alternate days of every week for 12 weeks. The aerobic training group underwent twelve weeks of aerobic training on Monday, Wednesday and Friday of each week. While the Zumba training group underwent twelve weeks of zumba training on Tuesday, Thursday and Saturday of each week. Outcomes were measured at baseline and after the 12 weeks of intervention.

Statistical Analysis

The following statistical procedure was employed to estimate the aerobic training and Zumba training on physical fitness variables of middle age obese women. 't' ratio was calculated to find out the significant of the difference between the mean of pre and post test of the group.

Results

Table II. Table Showing the Mean Difference, Standard Deviation and 't' Value Aerobic Training Group on Cardio Respiratory Endurance, Abdominal Strength and Flexibility

Variable	Test	Mean	SD	Std. Error of the mean	DF	't'	Table value
Cardio respiratory endurance	Pre test	1044.0	66.927	17.28	14	11.22*	2.145
	Post-test	1309.0	63.50	16.39			
Abdominal strength	Pre test	8.66	1.63	0.42	14	3.83*	
	Post-test	10.73	2.08	0.53			
Flexibility	Pre test	2.96	1.32	0.34	14	3.16*	
	Post-test	4.63	1.57	0.40			

* Significance at 0.05 level of confidence

To find out the significant difference between pre test and post test on cardio respiratory endurance, abdominal strength and flexibility of aerobic training group 't' ratio is employed and the level of significance was set at 0.05. The aerobic training group pre test value is 1044.0 and post test value is 1309.0 respectively.

Aerobic training group obtained 't' ratio is 11.22 greater than the table value 2.145. It shows that the aerobic training group has significant improvement on cardio respiratory endurance. The aerobic training group pre test value is 8.66 and post test value is 10.73 respectively. Aerobic training group obtained 't' ratio is3.83 greater than the table value 2.145. It shows that the aerobic training group has significant improvement on abdominal strength. The aerobic training group pre test value is 2.96 and post test value is 4.63 respectively. Aerobic training group obtained 't' ratio is 3.16 greater than the table value 2.145. It shows that the aerobic training group has significant improvement on flexibility.

Table III. Table Showing the Mean Difference, Standard Deviation and 't' Value Zumba Training group on Cardio Respiratory Endurance, Abdominal Strength and Flexibility

Variable	Test	Mean	SD	Std. Error of the mean	DF	't'	Table value
Cardio respiratory endurance	Pre test	1016.3	163.51	42.21	14	7.04*	2.145
	Post-test	1374.0	81.22	20.97			
Abdominal strength	Pre test	8.73	1.57	0.40	14	6.09*	
	Post-test	10.86	2.13	0.55			
Flexibility	Pre test	2.93	1.84	0.47	14	42.56*	
	Post-test	4.86	1.86	0.48			

* Significance at 0.05 level of confidence

To find out the significant difference between pre test and post test on cardio respiratory endurance, abdominal strength and flexibility of zumba training group 't' ratio is employed and the level of significance was set at 0.05. The aerobic training group pre test value is 1016.3 and post test value is 1374.0 respectively. Zumba training group obtained 't' ratio is 7.04 greater than the table value 2.145. It shows that the zumba training group has significant improvement on cardio respiratory endurance. The zumba training group pre test value is 8.73 and post test value is 10.86 respectively. Zumba training group obtained 't' ratio is 6.09 greater than the table value 2.145. It shows that the zumba training group has significant improvement on abdominal strength. The zumba training group pre test value is 2.93 and post test value is 4.86 respectively. Zumba training group obtained 't' ratio is 42.56is greater than the table value 2.145. It shows that the zumba training group has significant improvement on flexibility. Pre test and post test of Aerobic training group and Zumba training group on cardio respiratory endurance, abdominal strength and flexibility showed in figure I to III.

Figure I. Showing the Mean Values of Aerobic Training and Zumba Training on Cardio Respiratory Endurance

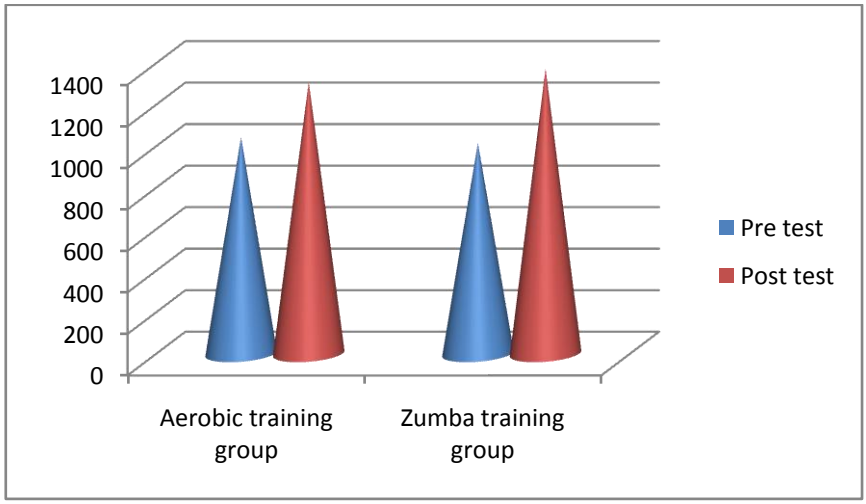


Figure II. Showing the Mean Values of Aerobic Training and Zumba Training on Abdominal Strength

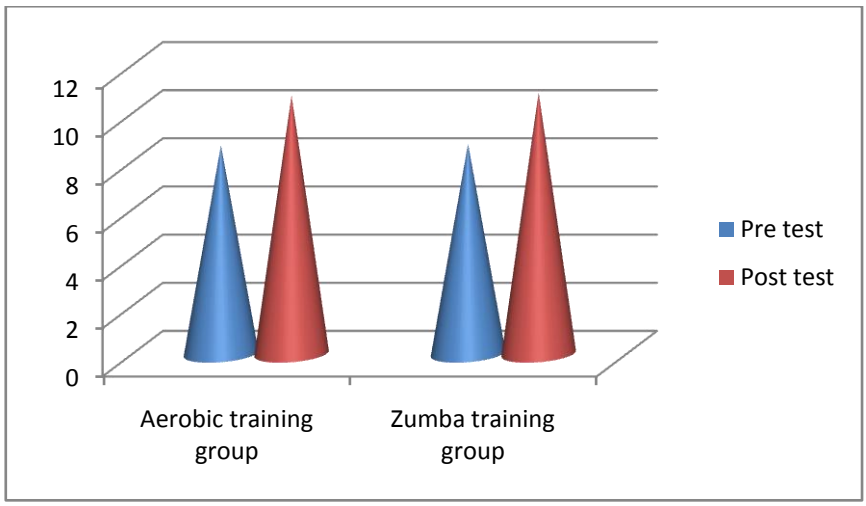
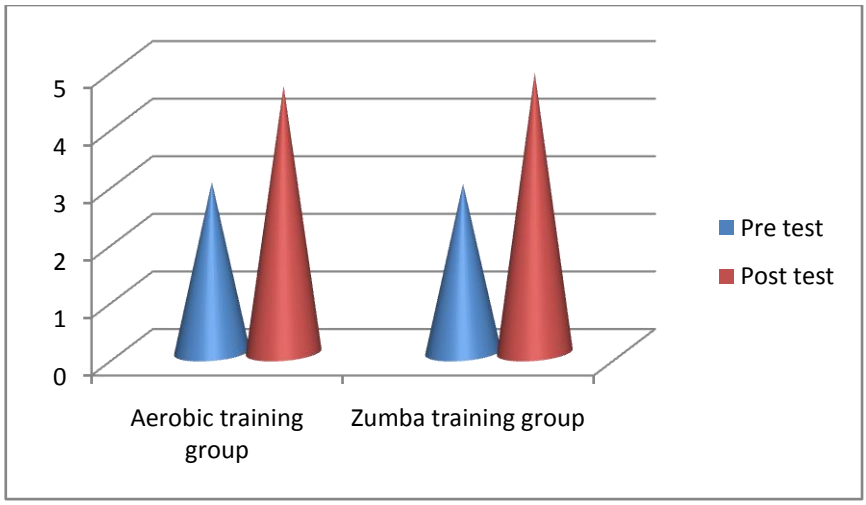


Figure III. Showing the Mean Values of Aerobic Training and Zumba Training on Flexibility



Conclusions

Within the limitation of the study the following conclusions are drawn.

1. It is concluded that the physical fitness variables namely cardio respiratory endurance, abdominal strength and flexibility are significantly improved due to aerobic training.
2. It is concluded that the physical fitness variables namely cardio respiratory endurance, abdominal strength and flexibility are significantly improved due to zumba training.

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