International Journal of Physical Education
Volume 7 | Issue 1 | April, 2014 | 25-28

Research Article

A comparative study of brisk walking and aerobic exercises and its effect on physiological fitness of sedentary housewives

■ KSHAMA KALNAWAT

Received : 09.01.2014; **Revised :** 14.03.2014; **Accepted :** 26.03..2014

Author for Correspondence

Department of Physical Eduacation, Amolakchand Mahavidyalaya, YAVATMAL (M.S.) INDIA

■ **ABSTRACT**

The aim of this study was to examine the comparative effect of six weeks brisk walking and aerobic exercises on sedentary housewives. Women of the age 40 to 45 years were divided into three groups of 20 each. One group undergone 6 weeks of brisk walking, second group in aerobic exercises and the third group was control group. For testing its effects pre and post- tests were conducted. For physiological fitness, 7 variables were selected for all the three groups similar to endurance by 600 yard run and walk test and for flexibility sit and reach test, for speed 20 meters run. Thereafter, BMI (Body mass index) WHR (waist hip ratio) breath holding capacity and heart rate were measured. The obtained data were treated by some statistical formulae. Comparison was made by the test's tabulated and calculated values at 0.01 levels with 19 degree of freedom and conclusions of the study were drawn. Result showed a significant influence in both experimental groups.

■ **Key Words :** Brisk walking, Aerobics, Physiological fitness, Sedentary, Housewives

■ **How to cite this paper :** Kalnawat, Kshama (2014). A comparative study of brisk walking and aerobic exercises and its effect on physiological fitness of sedentary housewives. *Internat. J. Phy. Edu.*, **7** (1) : 25-28.

In India the traditional activities which were performed at various festivals are not in practice due to modern living style adopted by Indian women. But in rural area these activities are still in practice. The rural women have to walk long distances for their daily work and the maximum work is done manually. Therefore, they keep themselves fit and enjoy healthy life. On the other hand, the urban women adopt modern living and take the help of modern gadgets for their routine work and do not keep themselves physically and physiologically fit and so, they have to face many health problems like obesity, backache, overweight, knee pain, blood pressure, diabetes etc. The author being a physical education teacher comes in contact with many sedentary women who talk of their health problems and discuss what type of exercises they can do. Many sedentary women go for walking in the group. They walk lazily and talk more than walking. Therefore, it was decided to undertake a comparative study of the effects of brisk walking and aerobic exercises on the sedentary housewives.

Health benefits of walking are:

– Walking improves blood circulation by increasing blood flow and the size and tone of the blood vessels, reducing the risk of cardio-vascular diseases.
– Walking strengthens the muscles of the body, including the heart muscles and make them work more efficiently.
– Walking slows the resting heart rate by increasing stroke volume, or the volume of blood the heart pumps with one contraction.
– Walking tends to reduce the height to which arterial pressure rises during exercise and stress.
– Walking encourages collateral circulation to heart muscles. These can dramatically increase the chance of surviving a coronary.
– Walking reduces the risk of obesity.
– Walking improves digestion and elimination of body wastes.
– Walking increases oxygen supply to the brain and

mental sharpness, increasing the potential for creative thought.
- Walking tends to retard the ageing process and provide a more youthful appearance.
- Walking aids lymphatic circulation.
- Walking stimulates the metabolism both during and after exercise.
- Walking increases respiratory capacity and aerobic power.

Thus, walking helps the person to be fit and healthy.

A study on aging:

The following is a summary of conclusions of three days conference on anti - ageing exercises held at the National Institutes of Health in Bethesda, Maryland. The conclusion includes:

Walking is most efficient form of exercise and the only one that can person safely follow for lifetime.

As people get older, the bones begin to demineralize and weaken. Exercise such as walking slow the demineralization process particularly in the legs stimulates bone growing cells – bone can remain tougher and harder to break. Walking also affords greater range of motion.

As people age, their cardio-vascular function loses its elasticity and vigorousness. However, the cardio-vascular systems of older people who exercise function properly.

Daily exercise permits greater food intake and better, blood circulation, which improves each cell's, nourishment while preventing obesity.

Many overweight people fear adult onset diabetes. This disease can be controlled although it can still have serious effects. Late onset diabetes related to obesity is almost entirely reversible by exercise.

Rheumatoid arthritis and osteoarthritis are common in older people. It has been estimated that more than 90 per cent of people over 60 have some form of osteoarthritis. The studies from conference showed that people with arthritis can get certain benefits from the exercise, provided the level of exercise is increased gradually.

Many people fear aging, afraid that they will be "turned out to posture" and become uncounted. This increases stress, depression and fear. However, walking improves the quality of life. Research umpiring exercise to a widely prescribed tranquilizer, valium found exercise relax people more and elevate their moods more effectively with none of the drugs treatment.

Hence, this conference proved that walking and simple exercises improves the health of adults and slowdown aging.

■ METHODOLOGY

Selection was made of 60 women in the age of 40 to 45 years. The 60 women were divided into three groups of 20. The 1st group was participating in brisk walking, the other group was participating in 30 minutes aerobic exercises and 3rd was the control group. Before starting the exercises the physical fitness variables and physiological variables of the three groups were measured. In physical fitness variables endurance by 600 yard run and walk test and for flexibility sit and reach test, for speed 20 meters run test were conducted and for physiological variables, BMI (Body mass index), WHR (waist hip ratio), breath holding capacity and heart rate were measured and score were recorded and again the post test of physical fitness variable and physiological variables were conducted and scores were recorded for statistical analysis. Brisk walk was conducted on the road for 2½ km and returning to the starting point covered 5 km walked. One group was performing aerobic exercise for 30 minutes. Second group was walking 5 km daily for 6 weeks and the third group was control group doing no exercises.

Pre-test and post-test scores of physical fitness variables and physiological variables were collected for statistical analysis to see the effect of aerobic exercises and walking on adults women. Some standard liferature were consulted on methodology of research (Kamalesh, 1986; Kothari, 2006 and Horris *et al.,* 1999).

■ OBSERVATIONS AND DISCUSSION

The scores of pre-test and post- test of physical fitness variables, flexibility 600 meters run and walk test (for endurance) and 20 meters run for speed and physiological variable BMI (body mass index) WHR (Waist hip ratio) and breath holding capacity and heart rate were collected. Table

Table 1: Means and standard deviation of the physical fitness and physiological fitness variables (Pre- test scores)

Sr. No.	Variables	Aerobics group		Brisk walking group		Control group	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
1.	Speed 20 mt run test	9.79	0.30	10.15	2.21	10.51	2.35
2.	Endurance 600 mt. run and walk test	9.6	1.67	10.6	1.88	11.8	1.66
3.	Flexibility sit and reach test	-7.5	2.1	-8.2	2.4	-8.1	3.2
4.	BMI	35.5	2.5	34.5	1.8	36.2	2.8
5.	WHR	2.0	0.71	2.5	1.6	2.2	0.82
6.	Breath holding capacity	21.5	2.2	22.5	2.6	22.7	1.86
7.	Heart rate	95	4.2	95	3.2	96	2.2

*__Source:__ From the actual scores of test

1 represents the means and standard deviation of physical fitness and physiological fitness.

Table 1 indicates the scores of physical fitness variable and physiological variables of all the three groups' *i.e.* brisk walking group, aerobic exercise group and control group of sedentary adult women.

Table 2 indicates the means and standard deviations of all the three groups, aerobic group, brisk walking group and control group after 6 weeks training of aerobic exercises, brisk walking for 5 km and control group which was doing nothing.

Table 2 indicates the means and standard deviations of all the three groups, aerobics, brisk walking and control group after 6 weeks training of aerobic exercises to aerobic group and six weeks 5 km brisk walking to walking group. So, the aerobics group's 20 meters running timing before the training was 9.79 which was reduced to 8.92 the 600 mtrs run and walk timing before the training was 9 minutes six seconds reduced to 8 minutes 7 seconds. Flexibility which was 7.5 inches reduced to 2.2 inches. The body mass index (BMI) which was 35.5 before aerobic training reduced to 1.1 the waist hip ratio which was 2.0 before the training was reduced to 1.1, the breath holding capacity which was 21.5 seconds increased to 30.5 seconds. Heart rate which was 95 per minute before training reduced to 3.2 beats per minutes. These all records indicated that there was a positive significant effect on the physical fitness and physiological fitness variables of sedentary adult women due to

Table 2 : Mean and S.D. of all three groups of post-test scores

Sr. No.	Physical fitness and physiological variables	Aerobic group		Brisk walking group		Control group	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
1.	Speed 20 mt run. test	8.92	0.85	9.66	0.64	9.2	0.74
2.	Endurance 600 mt. run and walk test	8.7	1.59	8.7	0.60	11.0	1.40
3.	Flexibility sit and reach test	-2.2	1.1	-3.2	2.2	-7.5	2.7
4.	BMI	30.0	1.6	31.2	1.5	35.2	1.9
5.	WHR	1.1	0.46	1.2	0.21	1.8	0.62
6.	Breath holding capacity	30.5	3.2	29.5	0.82	21.6	0.96
7.	Heart rate	82	5.2	80.0	2.36	90	3.5

*__Source:__ From the actual scores of tests

Table 3: Mean, SD, and't' value of aerobic group and control group

Sr. No.	Physical fitness and physiological variables	Aerobic group		Control group		Calculated t	Tabulated t at 0.01 level from 19df
		Mean	S.D.	Mean	S.D.		
1.	Speed 20 mt run. test	8.92	0.85	9.2	0.74	89.28*	2.8
2.	Endurance 600 mt. run and walk test	8.7	1.59	11.0	1.40	40.79*	2.8
3.	Flexibility sit and reach test	-2.2	1.1	-7.5	2.7	1.78*	2.8
4.	BMI	30	1.6	31.2	1.5	2.8*	2.8
5.	WHR	1.1	0.46	1.2	0.21	41.17*	2.8
6.	Breath holding capacity	3.5	3.2	21.6	9.96	11.74*	2.8
7.	Heart rate	82	5.2	90.	3.5	5.59*	2.8

* indicate significance of value at P=0.01 and 19 degree of freedom

Table 4 : Physical fitness and physiological variables

Sr. No.	Physical fitness and physiological variables	Brisk walking group		Control group		Calculated t	Tabulated t at 0.01level from 19df
		Mean	S.D.	Mean	S.D.		
1.	Speed 20 mt run. test	9.55	0.64	9.2	0.74	1.59	2.8
2.	Endurance 600 mt. run and walk test	8.7	0.60	11.0	1.40	6.76*	2.8
3.	Flexibility sit and reach test	-3.2	2.2	-7.5	2.7	5.31*	2.8
4.	BMI	31.2	1.5	35.02	1.9	12.7*	2.8
5.	WHR	1.2	0.21	1.8	0.62	27.27*	2.8
6.	Breath holding capacity	29.5	0.82	21.6	0.96	28.21*	2.8
7.	Heart rate	80.	2.36	90	3.5	11.11*	2.8

*Indicates significant effect on physical fitness and physiological fitness of brisk walking

participation in aerobic exercises for six weeks.

The brisk walking group also increased in their physical fitness and physiological fitness. Before the start of brisk walking, 20 mts run timing was 10.15 second which reduced to 9.66 seconds, 600 mts. run and walk timing was 10.6 minutes which reduced to 8.7 seconds due to participation in brisk walking. Flexibility which was 8.2 inches reduced to 3.2 inches after brisk walking, BMI reduced from 34.5 to 31.2 WHR reduced from 2.5 to 1.5. Breadth holding capacity increased from the 22.5 minutes to 29.5 and heart rate which was 95 beats per minutes reduced to 80.0 beats per minutes. That indicates improved physical fitness and physiological fitness due to brisk walking.

The third group (control group, which was not doing any type of exercise) physical fitness, physiology variables before and after 6 weeks was also tested. The 20 meters run timing which was 10.51 seconds decreased to 9.2 seconds. 600 mts. run and walk timing reduced for 11 minutes 8 seconds reduced to 11, sit and reach test flexibility was 8.1 before reduced to 7.5 inches. BMI which was 36.2 was reduced to 35.2. WHR which was 2.2 reduced to 1.8. Breath holding capacity which was 22.7 was reduced to 21.6 which is negative effect. Heart rate which was 96 per minutes reduced to 90 beats per minutes. This effect showed that when pre-test was conducted on the control group, they got aware of what they were doing; taking some efforts to become physically and physiologically fit.

Table 3 indicates the't' value between the aerobic group and control group to see the effect of aerobic exercises on the physical fitness and physiological fitness variables. The post-test score of control group was compared in competing' value.

Table 3 indicates the result of the aerobic exercise for 6 weeks on the physical fitness variable and physiological variables and indicated that there was positive significant effect on physical fitness and physiological variables except in flexibility of sedentary women.

Table 4 indicates values for comparison between the brisk walking group and control group physical fitness and physiological variables.

Fig. 1 indicates the comparison of pre and post-test means amongst the group of brisk walking, aerobic exercises group and control groups.

Fig. 1 indicates that there was positive significant effect on the physiological related fitness variable on the adult women, of brisk walking and aerobics as compared to the control group.

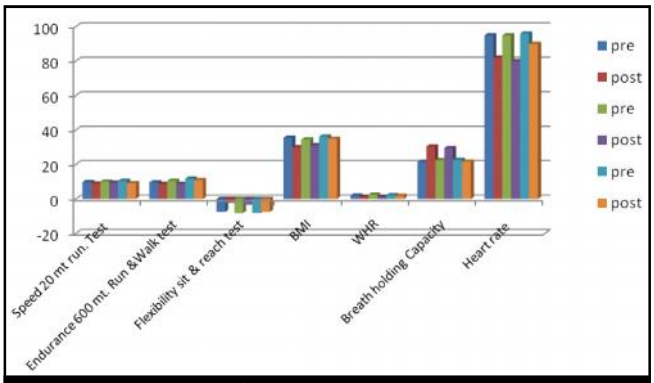

Fig. 1: Comparison of pre and post-testmeans

Conclusion:

The following conclusions were drown out of the study:

There was a positive significant effect of aerobic exercises and brisk walking on the physiological related fitness variables of sedentary women of age 40 and above therefore the following recommendations are made:

- The adult women should adopt the active life style to retard aging.
- The adult sedentary women at least adopt 5kms or more than 2 kms walking in the morning or evening to keep themselves fit and healthy.
- Adult women should do at least 30 minutes exercise regularly for fitness and health.
- Exercise can be done any time whenever they get time accept immediate after the meal.

■ REFERENCES

Hagl, S. (2003). Untersuchung verschiedener sprungkraftfördernder Übungen. From the World Wide.

Harris, G.R., Stone, M.H., O'Bryan, H., Proulx, C.M. and Johnson, R. (1999). Short term performance effects of high speed, high force and combined weight training. *J. Strength & Condit. Res.*, **13**: 14-20.

Hewett, T.E., Stroupe, A.L., Nance, T.A. and Noyes, F.R. (1996). Plyometric training in female athletes.

Kamalesh, M.S. (1986). *Methodology of research in physical* . . . . Metro Politian Book Company Pvt. Ltd., NEW DELHI, INDIA.

Kothari, C.R. (2006). *Research methodology:* Methods and techniques. New Age International Publication, NEW DELHI, INDIA.

Mujumdar, *Vyam Dhyan Kosh* (1936).Vol. **1**. Vadodara (GUJARAT) INDIA.