

Research Article

Yogic and Aerobic exercises: Influence on selected physiological and psychological variables among middle aged men

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Abstract

The key goal of the investigation was to find out the influence of yogic and aerobic exercises on selected physiological and psychological variables among middle aged men. 60 Middle aged men between 30 to 50 years were subjects divided into three equal groups (N= 20). Group I was aerobic exercise group (AEG), Group II was Yogic Exercise Group (YEG) and Group III was Control Group (CG). The experimental groups trained for 12 weeks three days a week and for 50 minutes per day. All the three groups underwent a pre and post-test for the study variables Physiological (pulse rate, percent body fat, systolic and diastolic blood pressure) and psychological (level of job anxiety and level of occupational stress). The results indicated that all the study variables (physiological and psychological) except the systolic blood pressure had substantial difference between the groups at 0.05 level of confidence. The systolic blood pressure did not yield any significant result with the F-value being 1.90 at 0.05 level. It was concluded that yogic and aerobic exercise programs assist to advance the physiological variables such as pulse rate and drop the percent body fat. Further these exercises also aid in considerably reducing the job anxiety and occupational stress which result in a healthful living.

Introduction

The term yoga is an art of skillful living. It combines exercise, breathing, diet, relaxation and meditation in the physical and mental form to make the body tougher and better. It accentuates the association of body, mind and breath, the harmonization of breath and effort, the use of preparation, counter pose, series of related postures and alteration of positions to suit individual needs resulting to know one self. An individual cannot practice yoga without variations happening within self, becoming extraconscious that it impacts on life and understanding the way one lives.

Though Yoga practice can be of low impact but the exquisiteness of it is that it is handy to everybody, as the period can be adjusted to each person's level of fitness or state of health. The health of our body and mind rest on the trustworthiness of the health of our innerstructures- the heart, lungs, digestive system, glands, mind, the nervous system etc. If the organs in the body

are dynamic and the body has passable resistance power, it resists the toxic effects of medicines, which give rise to diseases and side effects. Further, yoga develops fitness, lowers blood pressure, promotes relaxation and self-confidence and decreases stress and anxiety. Individuals who indulge in the training of yoga incline to have decent co-ordination, posture, flexibility, concentration, sleeping habits and digestion. Studies have shown that yoga accelerates the metabolic activity of an individual thereby reducing the risk of hypokinetic diseases and extending the longevity of life. On the other hand aerobic exercise is referred to as the activity carried in the presence of oxygen. It is also termed as cardio exercises, wherein the oxygen is used in the bodies metabolic or energy producing procedure. Aerobic exercises involve the utilization of large muscle groups activity performed at moderate intensity over an extended period of time. In this type of activity the heart and the lungs are overloaded which causes them to work harder thereby resulting in enhanced fitness levels. The significant indication be-

hind aerobic exercises is to get up and get moving. Activities like bicycling, cross country, skiing, skating, fitness walking, jumping, rope running, stair climbing and swimming are classified as aerobic exercises. This apart, an individual should discover something to relish by undertaking an activity that keeps the heart rate raised for constant time period for a healthier life. The benefits of aerobic exercises are many fold which results in enjoyment of life. Taking the above factors into consideration this study is an attempt to identify the impact of yogic exercises and aerobic training on a few selected physiological and psychological components of middle aged male individuals.

Methods and Material

60 Middle aged men between 30 to 50 years were selected as subjects and were randomly assigned into three an equal groups (N= 20). Group I was named as aerobic exercise group (AEG), Group II was Yogic exercise group (YEG) and Group III was control group (CG). The experimental groups trained for 12 weeks three days a week and for 50 minutes per day. A 5 minute warm and 5 minute cool down was administered for the experimental groups every day. All the three groups underwent a pre and post-test for the study variables. The variables which were chosen for the study were Physiological (pulse rate, percent body fat, systolic and diastolic blood pressure) and psychological (level of job anxiety and level of occupational stress). The aerobic program consisted of exercises at moderate intensity with slow, medium and fast movements for 40 minutes. The yogic exercise program included yama class, sihilikaranavyayama, suryanamaskar and asanas, breathing practice pranayama was designed systematically and scientifically to enhance the selected physiological and psychological components of the middle aged men. Analysis of covariance (ANACOVA) was used as the statistical tool to define the significant difference between groups and post hoc-test was used to test the significant difference of pairs of adjusted final group means.

Results and Discussion

Variables	Sources	Sum of Squares	Mean Square	F-value	Sig
Pulse Rate (Beats per minute)	Between Groups	241.02	120.51	11.53	*
	Error	585.57	10.46		
Percent Body Fat (Millimeter)	Between Groups	346963.49	14.30	37.13	*
	Error	316086.69	0.39		
Systolic Blood Pressure (mm/hg)	Between Groups	91.88	45.95	1.90	NS
	Error	1353.37	24.17		

Diastolic Blood Pressure (mm/hg)	Between Groups	75.47	37.73	4.48	*
	Error	471.46	8.42		
Job Anxiety (Points Scored)	Between Groups	323.18	161.59	40.23	*
	Error	224.91	4.02		
Occupational Stress (Points Scored)	Between Groups	816.92	408.46	62.32	*
	Error	367.04	6.55		

*Significant at 0.05 levels

Table 1: showing the Analysis of Co-Variance for the mean difference among the aerobic, yogic and control groups

In the outcomes in the above table-1 indicates that in all the study variables (physiological and psychological) except the systolic blood pressure are significant between the groups at 0.05 level of confidence. The systolic blood pressure did not yield any significant result with the F-value being 1.90 at 0.05 level. In order to find out the significance of the difference of all possible pairs of adjusted post-test means Scheffe's Post Hoc test was applied. The results of the test are presented in (Table 2).

VARIABLES	Adjusted Post Test Means			Mean Difference	F-value
	Control Group	Aerobic Group	Yoga Exercise Group		
Pulse Rate (Beats per minute)	83.3	81.28		2.02	3.906
	83.3		78.41	4.89	22.876*
		81.28	78.41	2.87	7.877*
Percent Body Fat (Millimetres)	21.75	20.67		1.08	30.577*
	21.75		20.08	1.67	73.048*
		20.67	20.08	0.59	9.103*
Systolic Blood Pressure (mm./hg)	123.24	121.57		1.67	1.151
	123.24		120.2	3.04	3.822
		121.57	120.2	1.37	0.788
Diastolic Blood Pressure (mm./hg)	80.82	78.12		2.7	3.659
	80.82		79.96	0.86	0.891
		78.12	79.96	1.84	3.995
Job Anxiety (Points Scored)	32.15	28.57		3.58	31.86*
	32.15		26.53	5.62	78.646*
		28.57	26.53	2.04	10.393*

Occupational Stress (Points scored)	131.24	126.11		5.13	40.154*
	131.23		122.22	9.04	124.69*
		126.11	122.2	3.91	23.326*

*Required value for significance at 0.05 level = 5.545

Table 2: showing Schaffer’s test of significance between paired adjusted post-test means on the selected physiological and psychological variables

Table 2 showed that the difference between the adjusted means for the control group and aerobic exercises group was 2.02; control group and yogic exercises group was 4.89 and aerobic exercise group and yogic exercises group was 2.87. The obtained F-ratio of the above comparisons was 3.906, 22.876 and 7.877 respectively. The table F-ratio was 5.545. The results show that the mean difference between the control group and yogic exercises group was recorded to be significant whereas the mean difference between the control group and aerobic exercises group was found to be insignificant.

The difference between the adjusted means of percent body fat for the control group and aerobic exercises group was 1.08; control group and yogic exercises group was 1.67 and aerobic exercises group and yogic exercises group was 0.59. The obtained F-ratio of the above comparisons was 30.577, 73.048 and 9.103 respectively. The table F-ratio was 5.545. Hence all the three comparisons were significant.

The difference between the adjusted means of systolic blood pressure for the control group and aerobic exercises group was 1.67; control group and yogic exercises group were 3.04 and aerobic exercises group and yogic exercises group was 1.37. The obtained F-ratio of the above comparisons was 1.151, 3.822 and 0.778 respectively. The table F-ratio was 5.545. Hence all the three comparisons were statistically insignificant.

The difference between the adjusted means of diastolic blood pressure for the control group and aerobic exercises group was 2.7; control group and yogic exercises group were 0.86 and aerobic exercises group and yogic exercises group was 1.84. The obtained F-ratio of the above comparisons was 3.659, 0.891 and 3.995 respectively. The table F-ratio was 5.545. Hence all the three comparisons were statistically insignificant.

The difference between the adjusted means of job anxiety for the control group and aerobic exercises group was 3.58; control group and yogic exercises group was 5.62 and aerobic exercises group and yogic exercises group was 2.04. The obtained F-ratio of the above comparisons was 31.86, 78.646 and 10.393 respectively. The table F-ratio was 5.545. Hence all the three comparisons were significant.

The difference between the adjusted means of occupational stress for the control group and aerobic exercises group was 5.13; control group and yogic exercises group was 9.04 and aerobic exercises group and yogic exercises group was 3.91. The obtained F-ratio of the above comparisons was 40.154, 124.69 and 23.326 respectively. The table F-ratio was 5.545. Hence all the three comparisons were significant.

Discussion

The keypurpose of the study was to know the influence of the aerobic exercise and yogic exercise programs on the selected physiological variables like pulse rate, percent body fat, diastolic and systolic blood pressure, psychological variables like job anxiety and occupational stress among middle aged men. The results showed that the selected physiological and psychological variables of the subjects enhanced meaningfully after undergoing the aerobic and yogic exercises for a period of twelve weeks. The changes in the selected parameters are attributed to the proper planning, preparation and execution of the above two training programs for the middle aged men.

It is believed that yogic exercises develop the external and internal organs in a balanced fashion which effects an individual’s health and lifestyle. Cardio vascular system is directly related with the fitness level of a person. Pulse rate is the heart rate which is affected due to exercise and the results of the study on pulse rate for yogic exercises exhibited that there was significant enhancement-towingto exercise program. The result of the research investigationrevealed that there was aimportantprogress in stabilizing the pulse rate in the yogic exercises group than the aerobic exercises group and control group. The above results are in line with the studies of [1-9]

Body fat is one of the many factors which are affected due to the inactivity. This apart, consumption of saturated fats and diet rich in fat content can cause an enhanced level of body fat percent in the body [10]. The results of the percent body fat on yogic exercises group and aerobic exercises group revealed that there was substantialdecrease and improvements in controlling the percent body fat owing to twelve weeks of training. Further, the Yogic exercise group showed bettercontrol in body fat level than the aerobic exercises group and control group. The outcome agrees with the studies of American Heart Association (2006), [11,12].

It is assumed that the working of different systems of body totally depend on the cardio-respiratory system. All the body parts should receive proper amount of blood to carry on the activity and the blood flow depends on the systolic and diastolic blood pressure. The findings of the systolic blood pressure and diastolic blood pressure on yogic exercises group and aerobic exercises group dis-

played that there was no major progress in systolic blood pressure and diastolic blood pressure due to twelve weeks of training. This is only variable where there is no beneficial effect due to the training protocol which is in line with other studies of [4,13,6,8].

Anxiety is a psychological trait which alters once performance as it has both a positive and negative effect. A person who controls the anxiety levels succeeds in his efforts. The effects of job anxiety on yogic exercises group and aerobic exercises group presented that there was weight enlargement in controlling the job anxiety due to twelve weeks of training. The Yogic exercises group showed superior control in job anxiety level than the aerobic exercises group and control group which is supported by studies of [14-19]

It is understood that stress is a slow poison as it has a very undesirable effect on all the systems of the body. It is a killer and affects all parts of the body and leads to an unhealthy body. The outcomes of occupational stress on yogic exercises group and aerobic exercises group disclosed that there was momentous expansion in controlling the occupational stress due to twelve four weeks of training. Besides, the yogic exercises group showed better control in the occupational stress which was superior than the aerobic exercises group and control group which is supported by studies of [20-22],

Conclusion

It is concluded that yogic and aerobic exercise programs assist to advance the physiological variables such as pulse rate and drop the percent body fat. Further these exercises also aid in considerably reducing the job anxiety and occupational stress which result in a healthful living.

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