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Assessment of aerobic exercise and yogic practice on blood pressure

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Abstract

The purpose of the study was to find out the effect of aerobic exercise and yogic exercises on blood pressure. To achieve this purpose of the study sixty men students studying physical education and sports sciences, Annamalai University, Annamalai Nagar, were selected as subjects at random. The selected subjects were randomly divided into three groups and each group consists of twenty subjects each, such as aerobic exercises group and yogic exercise group and control group. The group-I underwent aerobic exercises programme, group-II underwent yogic exercise programme for three days per week for twelve weeks. Group-III acted as control, they did not participate any special training programmes apart from their regular physical education activities as per their curriculum. Among the Systolic Pressure (SP) and Diastolic Pressure (DP) as criterion variable. All the subjects of three groups were tested on selected dependent variables at prior to and immediately after the training programme. The analysis of covariance was used to analyse the significant difference, if any among the groups. The 0.05 level of confidence was fixed as the level of significance to test the "F" ratio obtained by the analysis of covariance, which was considered as appropriate. The results of the study revealed that there was a significant difference among aerobic exercises group, yogic exercise and control group on Systolic Pressure (SP) and Diastolic Pressure (DP).

Keywords: yogic exercises group, aerobic exercise, Systolic Pressure (SP) and Diastolic Pressure (DP)

Introduction

Aerobic exercises improve the functions of the circulatory, the respiratory and the muscle system while varied intensities of exercises are aimed at improving the cardiovascular health of a person. Exercises increase the overall efficiency of the heart contraction and become more forceful. The diastolic phase increase and the reservoir capacities are enlarged.

Yoga is one of India's wonderful gifts to mankind. One of its valuable qualities is that it builds up a store of physical health through the practice of a system of exercise called 'asanas' which keep the body cleansed and fit. Yoga believes that exercise is essential for speedy removal of toxins and for keeping blood circulation and all internal processes functioning smoothly. Yoga has complete message for humanity. It is a message for the human body, mind and soul.

The yogic exercises in general differ from the physical exercises. The nature of all practices of yoga is psychological and physiological. Exercises emphasizing the control of mental processes directly are more psychological. Other exercises are more physical and physiological. Recent past has seen yogic practices become more popular and is used extensively for promoting fitness and health. Yogic exercises influence both mind and body whereas non-yogic exercises have their effect mainly concentrating the physical body. Yogic exercises remove fatigue actions, alertness, improving perceptions, ensuring protection to body parts, steadiness than non-yogic exercises. Yogic exercises help to conserve energy whereas the non-yogic exercises are repetitive and consume lot of energy. Yogic exercises mainly formed for relaxation. During asana the muscles which are not involved actively are relaxed. With relaxation the muscles returns to its original form after contraction which makes the body more flexible unlike non-yogic exercises. Yogic exercises aim at improving blood circulation to all the vital organs. Non-yogic exercises improve blood circulation in voluntary system resulting in better muscular functions and muscular development.

Methodology

The purpose of the study was to find out the effect of aerobic exercises and yogic exercise on selected blood pressure. To achieve this purpose of the study sixty men students studying physical education and sports sciences, Annamalai University, Annamalai Nagar, were selected

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As subjects at random. The selected subjects were randomly divided in to three groups and each group consists of twenty subjects each, such as yogic exercises group and aerobic exercise and control group. The group-I underwent aerobic exercises programme, group-II underwent yogic exercise programme for three days per week for twelve weeks. Group-III acted as control, they did not participate any special training programmes apart from their regular physical education activities as per their curriculum. Among the Systolic Pressure (SP) and Diastolic Pressure (DP) as criterion variable. All the subjects of three groups were tested on selected dependent variables at prior to and immediately after the training programme. The analysis of covariance was used to analysis the significant difference, if any among the groups. the 0.05 level of confidence was fixed as the level of significance to test the ‘F’ ratio obtained by the analysis of covariance, which was considered as an appropriate.

Administration of training programme

To achieve the purpose of the present study, two training programs namely aerobic exercise and yogic exercise were designed scientifically. The Scientifically designed programmes were given to the subjects of respective groups such as aerobic Exercise (Group-I), Yogic Exercise (Group –

Result of study

Table 2: Analysis of Covariance and ‘F’ ratio on selected criterion variables of yogic exercises group, Aerobic exercise and control group

Systolic Pressure (SP)								
	Aerobic exercises group	yogic exercise group	Control group	Source of variance	Sum of squares	df	Means square	‘F’ Ratio
Adj. Post-test Mean	128.71	129.11	134.83	B	464.0	2	231.99	30.66*
				W	423.8	56	7.57	
Diastolic Pressure (DP)								
Adj. Post-test Mean	77.18	77.35	79.07	B	43.2	2	21.59	3.10
				W	377.6	56	6.74	

* Significant at .05 level of confidence. (Table F-ratio at 0.05 level of confidence for 2 and 57 (df) =3.15, 2 and 56(df) =3.15.

Table 3: Scheffé S Test for the Difference between the Adjusted Post-Test Mean of Selected Criterion Variables

Adjusted Post-test Mean Systolic Pressure (SP)				
Aerobic Exercise Group	Yogic Exercise Group	Control group	Mean Difference	Confidence interval at .05 level
128.71	129.11		0.41	2.21
128.71		134.83	5.71*	2.21
	129.11	134.83	6.12*	2.21

Results

Before applying the experiment all the subjects of the aerobic exercises group, yogic exercise group and control group attended the pre-test, which was conducted a day prior to the commencement of the training and the data were collected on Systolic Pressure and Diastolic Pressure. After twelve weeks of training the post-test was conducted one day after the training period to find out any changes in the criterion variables.

The analysis of covariance (ANCOVA) was used to find out the significant difference if any, among the experimental groups and control group on selected criterion variables separately. In all the cases, .05 level of confidence was fixed to test the significance, which was considered as appropriate. Since three groups were involved in this study, the Scheffé S test was used as pos-hoc test

Discussion

In the present study the aerobic exercise and yogic exercise group decreased significantly for the when compared with

II). The subjects of the control group were not given any special training schedule. The detailed procedures of these two training programmes are dealt in detail.

Load dynamic

Table 1: Name of Floor Aerobic Exercises, Number of Counts and Number of Repetition and Asana Exercises

S. No	Name of Aerobic Exercise	No. of Counts	Asana	Duration
1	Touch Out	32	Padmasana	2 minute
2	Side to Side	32	Vajrasana	2 minute
3	Double Side to Side	32	Matsyasana	2 minute
4	Grapevine	32	Bhujangasana	2 minute
5	Cross Over Step	32	Sarvangasana	2 minute
6	Jump on the Spot	32	Shalabhasana	2 minute
7	Knee Curl	32	Dhanurasana	2 minute
8	Front Kick	32	Halasana	2 minute
9	Knee and Arm Lift	32	Chakrasana	2 minute
10	Side Kick	32	Shavasana	5 minute

Over load principle

The load increased by one repetition after completion of four weeks

control group, agreeing with the findings of Habibzadeh MR, *et al.*, Cooper Pollock and Jackson, Smitz and Bachl, Dawson and Hurley, Choquette and Ferguson where as Hirofumi and Boyer and Kasch observed a decrease in systolic blood pressure only among hypertensive persons, but not in normative persons. Both the experimental groups showed the trend of decrease in systolic blood pressure. This may indicate that 12 weeks of training is enough to produce significant decrease in systolic blood pressure.

In the present study there was no significant change in diastolic blood pressure for any group at the end of the study. These findings are in accordance with those of Smutok *et al.*, Tanaka, Grayston and Webster. Whereas Choquette and Ferguson disagree with these results, they reported a decrease in diastolic blood pressure after training. In the above mentioned study the training period was six months and that may be the reason for the decrease in diastolic blood pressure. In the present study the training was done only for twelve weeks, so no change was observed in diastolic blood pressure within the period.

Conclusion

The results of study reveal that there was a significant improvement after the 12 weeks of aerobic exercises group and yogic exercises group in systolic blood pressure performance.

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