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Effect of Yogic Practices and Aerobic Exercise on Muscular Strength on Selected Physiological Variables

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Abstract

The purpose of the present study was to find the effect of yogic practice and aerobic exercise on selected physiological variables. For this purpose, forty five middle aged men of Uduppi town, Mangalore district, Karnataka state in the age group of 35 – 40 years were selected. They were divided into three equal groups (n = 15), each group consisted of fifteen subjects, in which group – I underwent yogic practice, group – II underwent aerobic exercise and group – III acted as control group who did not participate in any special training. The training period for this study was five days in a week for twelve weeks. Prior to and after the training period the subjects were tested for vital capacity and blood pressure (systolic and diastolic). Vital capacity was assessed by using wet-spirometer and blood pressure was assessed by using sphygmomanometer respectively. 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. Since there were three groups involved in this study the Scheffé S test was used as pos-hoc test. It was concluded from the result of the study that the yoga practice and aerobic exercise has positively altered the criterion variables, such as, vital capacity and blood pressure (both systolic and diastolic).

Keywords: Yogic practice, aerobic exercise, vital capacity, systolic and diastolic blood pressure.

Introduction

This reality of pure Consciousness has been recognized by all thinkers, spiritualists or materialists, as the fundamental axiom of life from which intelligence, volition, love and thought emanate[1]. It is a science that affects not only the aware oneself but the subliminal as well. It is a practical physiological training, can praise man to the 'supra mundane level'.[2] Patanjali introduced yoga and its principles were first written down in India several thousand years ago.[3] According to Swami Vishnu Devananda[4] "Yoga is not an ancient myth buried in oblivion. It is the most valuable inheritance of the present. It is the essential need of today and the culture of tomorrow". Yogsanas have a deeper considerable value in the development of the physical, mental and spiritual personality. But pure physical exercises only have effect on the muscles and bones. Aerobic means "with oxygen", and refers to the use of oxygen in the body's metabolic or energy-generating process.[5]

Methods

This study under investigation involves the experimentation of yoga practice and aerobic exercise on selected physiological variables. Only middle aged men those who were residing in around Uduppi town, Mangalore District, Karnataka state and aged between 35 and 40 years were selected. The selected thirty subjects were randomly divided into three groups of fifteen each, out of which group - I (n = 15) underwent yogic practice, group - II (n = 15) underwent aerobic exercise training and group - III (n = 15) remained as control. The training programme was carried out for five days per week during morning session only (6 am to 8 am) for twelve weeks. Vital capacity was assessed by using wet-spirometer and blood pressure was measured by using sphygmomanometer.

Analysis of Data

The data collected prior to and after the experimental periods on vital capacity and blood pressure (systolic and diastolic) on yoga practice group, aerobic exercise group and control group were analysed and presented in the following table -I.

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Table I.
Analysis of Covariance and 'F' ratio for Vital Capacity and Blood Pressure (systolic and diastolic) for Yoga Practice Group, Aerobic exercise Group and Control Groups

Variable Name	Group Name	Yoga Practice Group	Aerobic exercise Group	Control Group	'F' Ratio
Vital Capacity	**Pre-test Mean ± S.D**	3.49 ± 0.085	3.43 ± 0.070	3.45 ± 0.015	1.67
	Post-test Mean ± S.D.	3.69 ± 0.094	3.62 ± 0.099	3.44 ± 0.104	25.41*
	Adj. Post-test Mean	3.664	3.638	3.445	49.39*
Systolic Blood Pressure	**Pre-test Mean ± S.D**	136.73 ± 3.47	135.07 ± 3.654	135.53 ± 2.503	1.05
	Post-test Mean ± S.D.	134.53 ± 3.583	133.87 ± 3.777	137.07 ± 2.434	3.884*
	Adj. Post-test Mean	134.593	134.567	137.307	69.58*
Diastolic Blood Pressure	**Pre-test Mean ± S.D**	91.40 ± 3.02	90.73 ± 3.28	91.87 ± 1.51	0.659
	Post-test Mean ± S.D.	89.47 ± 2.97	89.53 ± 3.25	92.53 ± 2.031	5.87*
	Adj. Post-test Mean	89.402	90.118	92.014	32.11*

* Significant at .05 level of confidence.
(The table value required for significance at .05 level of confidence with df 2 and 43 and 2 and 42 were 3.21 and 3.22 respectively).

Further to determine which of the paired means has a significant improvement, Scheffĕ *S* test was applied as post-hoc test. The result of the follow-up test is presented in Table - II.

Table II.
Scheffĕ S Test for the Difference Between the Adjusted Post-Test Mean of Muscular strength, Self-concept and Blood Pressure (systolic and diastolic)

Adjusted Post-test Mean of Muscular Strength				
Vital Capacity				
3.664		3.445	0.219*	0.1675
3.664	3.638		0.026	0.1675
	3.638	3.445	0.193*	0.1675
Systolic Blood Pressure				
134.593		137.307	2.714*	0.8255
134.593	134.567		0.026	0.8255
	134.567	137.307	2.741*	0.8255
Diastolic Blood Pressure				
89.402		92.014	2.612*	0.8512
89.402	90.118		0.716	0.8512
	90.118	92.014	1.896*	0.8512

* Significant at 0.05 level of confidence.

Results

The training intensity for yogic practice and aerobic exercise was shown in appendices. Before applying the experiment all the subjects of the yoga practice, aerobic exercise and control groups were attended the pre-test, which was conducted a day prior to the commencement of the training and the data were collected on vital capacity and blood pressure (systolic and diastolic). 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 an appropriate. Since there was three groups were involved in this study, the Scheffé *S* test was used as pos-hoc test and it was shown in Table - II. After applying the analysis of covariance, the result of this study showed that there was a significant difference among yoga practice, aerobic exercise and control groups on the changes in vital capacity and blood pressure after twelve weeks of training. The criterion variables such as, vital capacity was improved for both the yoga practice group and aerobic exercise group and systolic and diastolic blood pressure has significantly decreased after the yoga practice, aerobic exercise period. Further, comparing the adjusted post-test means of all the criterion variables, such as, vital capacity and systolic and diastolic blood pressure, both the training groups were significantly increased the performance after the training period, when compared with the control group. Basically the yoga practice and aerobic exercise has tremendously improves the physical, physiological and psychological parameters.

Conclusions

Vital capacity has improved[6] for both the experimental groups, such as yogic practice group and aerobic exercise group, when compared with the control group. The blood pressure has decreased[7,8,9] in yogic practice group and aerobic exercise group when compared with the control group.

Reference

1. Yogacharya Janakiraman and Carolina Rosso Cicogna, *Solar Yoga*, (New Delhi: Allied Publishers Ltd., 1989), p. 26.
2. Retrieved from http://hinduism.about.com/bl-yoga-define.htmon on 24-04-2012.
3. Retrieved from http://www.minddisorders.com/Py-Z/Yoga.html on 24-04-2012.
4. Swami Vishnu Devananda, *The Sivananda Companion to Yoga*, (New York: Fireside Book, Simon and Schuster, 2000), p. 10.
5. Retrieved from www.novapublishers.com/catalog/product_info.php ?products_id=10988 on 18-12-2013.
6. Kadu PP and Deshpande VK, (February 2014), "Effect of Yogic Exercise on Respiratory System in Middle Aged Men", *Journal of Physiology and Pathophysiology*, 4:1, 1-6.
7. Nemoto K, Gen-no H, Masuki S, Okazaki K and Nose H, (July 2007), "Effects of High-intensity Interval Walking Training on Physical Fitness and Blood Pressure in Middle-aged and Older People", *Maya Clin Proc*, 82:7, 803-11.
8. Chidambara Raja S, (July 2014), "Effects of Yogic Practices and Physical Exercises on Flexibility Anxiety and Blood Pressure", *Star International Research Journal*, 2:7, 1-9.
9. Vijaya Benerji G, Rekha KUmari Dulala, Farid Babu Meka and Ratna Kummar N, (July – August, 2013) "Effect of Yoga on Heart Rate, Blood Pressure, Body Mass Index", *Journal of Dental and Medical Sciences*, 8:2, 36-39.