ISSN: 2349 - 4891

International
Journal of Recent Research and Applied Studies
(Multidisciplinary Open Access Refereed e-Journal)

Effect of Yoga and Pranayama Practice on Vital Capacity and Blood Pressure among Middle Aged Women

Dr. S. Chidambara Raja

Associate Professor, Department of Physical Education and Sports Sciences, Annamalai University, Chidambaram, Tamilnadu, India.

Received 28th November 2017, Accepted 16th December 2017

Abstract

The purpose of this study was to find out the effect of selected yoga and pranayama practice on vital capacity and blood pressure among middle aged women. For this purpose twenty middle aged women were selected from various departments of Annamalai University, except physical education and fine arts. They were divided into two equal groups in which Group – I (n = 10) underwent yoga and pranayama practice weekly six days per week (i.e. Monday to Saturday), for nine weeks between 6.00 a.m. to 8.00 a.m., and Group – II (n = 10) acted as control, which did not underwent any training during the period of study apart from their regular activities. Vital capacity was measured by using the wetspirometer and blood pressure was assessed by using sphygmomanometer. The Analysis of Covariance (ANCOVA) was used as statistical tool for the present study. The result of the study indicated that the vital capacity was increased and both systolic and diastolic blood pressure was decreased significantly for the yoga and pranyama practice group. Moreover, the result of the study was also showed that there was a significant difference was occurred between the yoga and pranayama practice group and control group on selected criterion variables. It was concluded from the results of the study that the yoga practice is a better tool to reduce the blood pressure and increase the vital capacity.

Keywords: Yoga, Pranayama, Vital Capacity, Blood Pressure, Women.

Introduction

Yogasanas are Indian's unique contribution to physical education. Yoga and physical education may be compared to two bullocks hitched to shaft as they are for the judicious blending of the education of the body and the mind. There is no denial of the fact that yoga and physical education attach importance by gaining the benefits of physical health, mental health, physical fitness and peace of mind through their regular practices. The ultimate aim of which is to enjoy a good health and optimum fitness. Yoga is providing a multidimensional development and it has now become an adjunct to physical education. Vital capacity is the maximum amount of air a person can expel from the lungs after a maximum inspiration. It is equal to the inspiratory reserve volume plus the tidal volume plus the expiratory reserve volume.A person's vital capacity can be measured by a spirometer which can be a wet or regular spirometer. In combination with other physiological measurements, the vital capacity can help make a diagnosis of underlying lung disease. The unit that is used to determine this vital capacity is the millilitre (ml). Blood is carried from the heart to all parts of your body in vessels called arteries. Blood pressure is the force of the blood pushing against the walls of the arteries. Each time the heart beats (about 60-70 times a minute at rest), it pumps out blood into the arteries. Your blood pressure is at its highest when the heart beats, pumping the blood. This is called systolic pressure. When the heart is at rest, between beats, your blood pressure falls. This is the diastolic pressure.

Correspondence
Dr.S.Chidambara Raja
E-mail: rajadi42@gmail.com

Methods

This study under investigation involves the experimentation of the influence of yoga and pranayama practices on vital capacity and blood pressure among middle aged women from various departments of Annamalai University. The study was confined to the middle aged women of various departments of Annamalai University during the year 2012 – 2013. Totally 20 subjects were selected and they were not familiar with yoga and pranayama. The subjects selected were in the age group between 30 and 35 years. The subjects were further divided into two equal groups such as yoga and pranayama practice group (n=10) and control group (n=10). The experimental group practiced yogasana and pranayama weekly five days i.e. Monday to Saturday, between 6.00 a.m. and 8.00 a.m., for a period of nine weeks, which was considered adequate to indicate changes on selected criterion variables, if any. Vital capacity was measured by using wetspirometer.

The sphygmomanometer was used to assess the blood pressure (systolic and diastolic) of the subjects. The analysis of covariance (ANCOVA) was applied to find out the variance in each criterion variables. The level of significance to test and 'F'- ratio, obtained by the analysis of co-variance was fixed at .05 level of confidence.

Results of the Study

The data of blood pressure and vital capacity before and after the training of yoga practice and control groups were analysed and presented in table - I.

Table 1

Analysis of covariance of yoga practice group and control group on vital capacity and blood pressure

Variable Name	Group Name	Yoga and Pranayama Practice Group	Control Group	'F' Ratio
Vital capacity (ml)	**Pre-test Mean ± S.D**	2.26 ± 0.021	2.21 ± 0.09	0.02
	Post-test Mean± S.D.	2.92 ± 0.011	2.24 ± 0.06	6.85*
	Adj. Post-test Mean	2.90	2.19	15.14*
Systolic Blood Pressure (mmHg)	**Pre-test Mean ± S.D**	131.11 ± 5.23	131.38 ± 6.13	1.06
	Post-test Mean± S.D.	127.85 ± 4.41	132.52 ± 2.76	8.23*
	Adj. Post-test Mean	127.55	132.89	14.77*
Diastolic Blood Pressure (mmHg)	**Pre-test Mean ± S.D**	97.36 ± 2.98	98.86 ± 2.367	1.88
	Post-test Mean± S.D.	94.22 ± 3.87	99.27 ± 2.859	10.27*
	Adj. Post-test Mean	95.16	98.99	25.27*

***** Significant at .05 level of confidence. (The value for significance at .05 with df 1 and 18 and 1 and 17 are 4.41 and 4.43 respectively).

Results

The above table shows that the pre, post and adjusted post-test means of yoga and pranayama practice group on vital capacity, were 2.26 ± 0.021, 2.92 ± 0.011 and 2.90 and control group were 2.21 ± 0.09, 2.24 ± 0.16 and 2.19 respectively. The adjusted post-test means 'F' ratio of 15.14 shows that there was a significant improvement in vital capacity after the yoga and pranayama practice period. The pre, post and adjusted post-test means of yoga and pranayama practice group on systolic blood pressure, were 131.11 ± 5.23, 127.85 ± 4.41 and 127.55 and control group were 131.38 ± 6.13, 132.52 ± 2.76 and 132.89 respectively. The adjusted post-test means 'F' ratio of 14.77 shows that there was a significant decrease in systolic blood pressure after the yoga and pranayama practice period. The pre, post and adjusted post-test means of yoga and pranayama practice group on diastolic blood pressure were 97.36 ± 2.98, 94.22 ± 3.87and 95.16 and control group were, 98.86 ± 2.367, 99.27 ± 2.859 and 98.99 respectively. The adjusted post-test means 'F' ratio of 25.27 shows that there was a significant decrease in diastolic blood pressure after the yoga and pranayama practice period.

Conclusions

1. It was concluded from the results of the study, the vital capacity was improved and blood pressure (both systolic and diastolic) was decreased significantly after the yoga and pranayama practice period.
2. When compared with the control group, the yoga and pranayama practice group has significantly differ in both the criterion variables, such as, vital capacity and blood pressure (systolic and diastolic).

References

1. C. Wood, "Mood Change and Perceptions of Vitality: A Comparison of the Effects of Relaxation, Visualization and Yoga", *Journal R Social Medicine*, (May 1993), 86 (5), 254-258.
2. G. Roy, "Effect of Shavasana and Cyclic Meditation on Oxygen Consumption, Breath Rate, and Breath Volume", *Psychological Report*, (April 2001), 82 (1), 285-287.
3. P.S. Raju *et al*, "Influence of Intensive Yoga Training on Physiological Changes in Adult Women", *Journal Alternative Complement Medicine*, (1997), 3 (3), 291-295.
4. Swami Satyanand Saraswath, *Asana Pranayama Mudra Bandha*, (Varanasi: Bharagava Bushan Press, 1999), p.1.