INFLUENCE OF YOGASANA AND PRANAYAMA ON SELECTED PHYSIOLOGICAL VARIABLES AMONG UNIVERSITY MALE PLAYERS

S. Blessy Selva Arasan

Assistant Director of Physical Education, Kalasalingam University, Krishnankoil, Tamilnadu, India.

ABSTRACT

The purpose of the present study was to find out the influence of yogasana and pranayama on selected physiological variables (resting pulse rate and maximal oxygen uptake (VO_2 max). To achieve these purpose thirty male players from Kalasalingam University, Krishnankoil, Tamilnadu, India served as subjects. These subjects were divided into two groups, Group- I was experimental (n=15) and Group - II acted as control (n = 15). The control group was not engaged in yogasana and pranayama training. The experimental group was engaged in yogasana and pranayama training. The pre and post-test data were analyzed by analysis of co-variance (ANCOVA), the process by which pre-test mean differences can be adjusted to the pre-test means. Since, only two groups were involved in this study, the Scheffe's post-hoc test was not used whenever the F- ratio for adjusted post-test mean was found to be significant. In all the cases 0.05 level of confidence was selected to reject the null hypothesis. Yogasana and pranayama training showed a significant decrease in resting pulse rate. Yogasana practices group showed a significant increase in maximal oxygen uptake.

Keywords: Resting Pulse Rate, VO_2 max

INTRODUCTION

Yoga is an ancient system of breathing practices, physical exercises and postures, and meditation intended to integrate the practitioner's body, mind, and spirit. It originated in India several thousand years ago, and its principles were first written down by a scholar named Patanjali in the second century B.C. The word yoga comes from a Sanskrit word, yukti, and means "union" or "yoke." The various physical and mental disciplines of yoga were seen as a method for individuals to attain union with the divine. In the contemporary West, however, yoga is more often regarded as a beneficial form of physical exercise than as a philosophy or total way of life. As of 2002, more than six million people in the United States were practicing some form of yoga, with 1.7 million claiming to practice it regularly. 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. Physical education concerns with anatomical aspects of the physique with its physiological reactions for a given activity. 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. The word yoga is derived from the Sanskrit root yuj meaning to bind, join, attach and yoke, to direct and concentrate one's attention on, to use and apply. It also means union or communion. It is the true union of our will with the will of god. "It thus means", says Mahadev Desai in his introduction to the Gita according to Gandhi, "The yoking of all the power of body, mind and soul to God; it means the disciplining of the intellect, the mind, the emotions, the will, which that yoga presupposes; it means a poise of the soul which enables one to look at life in all its aspects evenly.

METHODOLOGY

To achieve the purpose of the study 30 male players from Kalasalingam University, Tamilnadu, India were selected as subjects and their age ranged between 18 to 22 years. Subjects were selected at random by lot procedure. They were asked to undergo medical checkup and were found to be normal, healthy and fit enough to undergo training. Group – I(experimental group) undergo training (n = 15) and Group - II acted as control (n = 15). The data were collected with the help of Physical Directors from Kalasalingam Educational institutions. The investigation reviewed the available scientific literature pertaining to yogasana and pranayama from books, journals, periodicals and research articles. Resorting from the review of literature and discussions with the experts and considering the feasibility criteria of the study and the relevance of the variables of the present study. In the present study yogasana and pranayama is consider as independent variables. The following are dependent variables: Resting Pulse Rate, Maximum Oxygen Uptake (VO_2 max).

STATISTICAL ANALYSIS

The data collected from experimental and control groups prior to and after experimentation on

selected physiological variables resting pulse rate and maximal oxygen up take (VO_2 max) were statistically examined for significant differences by applying the analysis of covariance (ANCOVA).

RESULTS

The data of pulse rate before and after the training of experimental and control groups were analyzed and presented in Table – I.

TABLE –I Analysis of Covariance for the Data on Resting Pulse Rate of Experiment and Control Groups

	Experimental Group	Control Group	SV	SS	df	MS	F- ratio
Pre – Test Mean	69.80	69.40	BG	2.80	1	2.80	0.81
SD	2.10	2.03	WG	96.23	28	3.43	
Post – Test Mean	66.30	69.30	BG	9.89	1	9.89	5.53*
SD	2.91	2.87	WG	50.20	28	1.79	
Adjusted Post Test Mean	65.91	68.41	BG	13.71	1	13.71	7.91*
			WG	46.65	27	1.73	

*Significant at 0 .05 level

Table - I indicated that the pre-test mean of pulse rate between experimental group and control group were 69.80 ± 2.10 and 69.04 ± 2.03 respectively. The obtained F- ratio of 0.81indicated that the pre-test means was not significant at 0.05 level of confidence. The Post-test mean of pulse rate between the experimental group and control group was 66.30 ± 2.91 and 69.30 ± 2.87 respectively. The F- ratio of 5.53 indicated that the post-test means was significant at 0.05 level of confidence. The adjusted post-test means of pulse rate between experimental group and control group were 65.19 and 68.41 respectively. The obtained F- ratio was 7.92 and it was greater than the tabulated F- ratio for degrees of freedom 1 and 27 was 4.21. It was concluded that there was a significant improvement after the experimental period. The data of maximal oxygen uptake (VO_2 max) before and after the training of experimental and control groups were analyzed and presented in Table – II

TABLE - II Analysis of Covariance for the Data on Maximal Oxygen uptake (VO_2 Max) of Experimental and Control Groups

	Experimental Group	Control Group	SV	SS	df	MS	F- ratio
Pre – Test Mean	1.65	1.66	BG	0.001	1	0.001	0.104
SD	0.58	0.45	WG	0.152	28	0.005	
Post – Test Mean	2.81	1.69	BG	0.124	1	0.124	22.52*
SD	0.21	0.49	WG	0.154	28	0.006	
Adjusted Post Test Mean	2.78	1.67	BG	0.111	1	0.111	55.01*
			WG	0.054	27	0.002	

*Significant at 0.05 level

Table - II indicated that the pre-test mean of maximal oxygen uptake between the experimental group and control group were 1.65 ± 0.58 and 1.66 ± 0.45 respectively. The F- ratio of 0.104 indicated that the pre-test means was not significant at the 0.05 level of confidence. The post-test mean of maximal oxygen uptake between the experimental group and control group were 2.80 ± 0.21 and 1.69 ± 0.49 respectively. The F- ratio of 22.52 indicated that the post-test means was significant at the 0.05 level of confidence. The adjusted post-test means of maximal oxygen uptake between the experimental group and control group were 2.78 and 1.67 respectively. The obtained F ratio was 55.01 and it was higher than the tabulated F radio for degree of freedom 1 and 27 was 4.21. It was concluded that there was a significant improvement after the experimental period.

CONCLUSIONS

1. Yogasana and pranayama training group showed a significant decrease in resting pulse rate.

2. Yogasana and pranayama practices group showed a significant increase in maximal oxygen uptake (VO_2 Max).

REFERENCES

[1] Bosco, James S. and William F. Gustafson, Measurement and Evaluation in Physical Education, Fitness and Sports, Englewood Cliffs: Prentice Hall Inc., 1983.

[2] Clarke, H. Harrison, Application of measurement and Physical Education, New Jersey: Prentice Hall Inc., 1967.

[3] Danielow, Alain, yoga: The Method of Re-integration, New York: The Murray Printing Company, 1955.

[4] Dunne, Desmond, The Manual of yoga, London: W. Foulsham and Co., Ltd., 1958, R.B.Psychological Concepts Coaching frost, Applios to physical Education and Massachusetts: Addison Wesley Publication Co., Ltd., 1971.

[5] Gharote, M.L. "Pranayama", Yoga Mimamsa, 23, (January 1985), p. 66.

[6] Gharote, M.L. "Pranayama", Yoga Mimamsa, 23, January 1985

[7] Guhan, M. S. "Hatha Yogic Exercises on Aerobic Capacity and Stamina", Psychological Report, December 2002, 71 (1).

[8] Hare and Roge Lamb, The Encyclopedia Dictionary of Psychology, Oxford: Blackwell Publishers Limited, 1983.

[9] Karwande, Anil Kumar, "Influence of Yogic Practices on Mental Fatigue", Yoga Mimamsa, 28, July 1979.

[10] Madhan, S. R. "Effect of Yoga Exercise on Cardio Risk Factor with Moderate Hypertension", Psychological Report, April 2003, 61 (2).