



ISSN: 2456-0057
IJPNE 2016; 1(1): 27-29
© 2016 IJPESH
www.journalofsports.com
Received: 07-02-2016
Accepted: 08-03-2016

Sujan Barman
Part - Time Teacher, Seva
Bharati Mahavidyalaya,
Kapgari Paschim Medinipur
West Bengal, India.

Effect of asanas and bastrika pranayama on physiological variables of tribal students

Sujan Barman

Abstract

Aim: The purpose of the study is to investigate the effect of asanas and bastrika Pranayama on physiological variables of tribal students.

Methodology: The subjects for this study were thirty male B.A/B.SC students of Seva Bharati Mahavidyalaya, Kapgari, Jhargram, Paschim Medinipur. The subjects were equally divided into three groups namely two experimental and one control groups. The two experimental treatments were assigned at random to two groups i.e. one for Asanas and another for Pranayama and the third group served as control. The treatment Schedule was prepared for eight weeks. The experimental treatments were employed for 30 minutes a day in six days a week for eight weeks duration. Pre and post-test data of all the subjects from three groups were collected before and after the experimental treatment period of 8 weeks. Following variables were selected for the purpose of this study: Hemoglobin and Breath holding capacity (Negative and positive).

Result: The data was analyzed by employing analysis of covariance at the 0.05 level of significance. The result of the study indicates that practice of both Asanas and Bastrika Pranayama had insignificant effect on Hemoglobin and significant effect on Positive and negative breath holding capacity of the subject.

Keywords: Hemoglobin, Breath holding capacity, Asanas and Pranayama

Introduction

Asanas are the static posture accredited with values of promoting physical fitness. Element of exertion with characteristics other physical exercises is eliminated in the system of asanas. Asanas have been classified into meditative and cultural poses. The aim of cultural poses is to produce a state of physiological balance in the human body so that it can possess the best organic vigour. Yogic Asanas help in the prevention and cure of many physical diseases, especially those of the digestive tract by regulating the secretion of various duct and ductless gland. Apart from all these yoga is an extremely economic practice.

Pranayama is an art and has techniques to make the respiratory organs to move and expand intentionally, rhythmically and intensively. It consists of long, sustained subtle flow of inhalation, exhalation and retention of breath. Puraka stimulates the system, rechaka throws out vitiated air and toxins; kumbhaka distributes the energy throughout the body. The movements include horizontal of the lungs and the ribcage. This disciplined breathing helps the mind to concentrate and enables the practitioner to attain robust health and longevity.

Objective of the study

To study the role of asanas and Bastrika Pranayama on Physiological variables of College Youths.

Hypothesis

It was hypothesized that there will be significant changes in the hemoglobin and breath holding capacity (Positive & Negative) of the subject after the training of ten weeks.

Methodology

Thirty under graduate B.A/B.SC male subjects were selected randomly from Seva Bharati Mahavidyalaya, Kapgari, Paschim Medinipur, W. B. Their age ranged from 19-25 years. Two experimental Groups (N=10 in each), namely Asanas (G1) and Bastrika Pranayama (G2).

Correspondence

Sujan Barman
Part - Time Teacher, Seva
Bharati Mahavidyalaya,
Kapgari Paschim Medinipur
West Bengal, India.

The two experimental treatments were assigned at random to two groups i.e. one for Asanas and another for Bastrika Pranayama and the third group served as control. The treatment Schedule was prepared for eight weeks. The practice schedule includes 12 asanas for asanas group and the only one Pranayama chosen for the study was Bastrika Pranayama. However, the Pranayama group performed anuloma- viloma at the outsets and bouts of the bastrika pranayama were practiced with relaxation between each bout. The experimental treatments were employed for 30 minutes a day in six days a week for the period of eight weeks. The third group served as control groups (G3). Physiological Variables chosen for the study were Hemoglobin and Positive and Negative breath

holding capacity. Standard test and measurement procedures were adopted to collect data for the study. Pre and post test data of all the subjects from three groups were collected before and after the experimental period of ten weeks. The data was analyzed by employing analysis of covariance at the 0.05 level of significance.

Finding

In order to identify the significant differences among three groups on selected variables, collected pre and post data were analyzed using the analysis of covariance. The findings of the study are as follows:

Table 1: Analysis of covariance for Hemoglobin

	Asanas	B. Pranayama	Control	S.V	df	SS	Mss	F-Ratio
INITIAL	163.000	155.429	159.714	Among Gr	2	201.812	0100.906	2.095
				Within Gr	18	867.125	48.174	
FINAL	159.143	152.286	159.143	Among Gr	2	219.438	109.719	1.650
				Within Gr	18	1197.125	66.507	
ADJUSTED	155.030	154.777	158.784	Among Gr	2	47.469	23.735	5.224*
				Within Gr	17	77.232	4.543	

*Significant at 0.05 levels. F (2,17) =3.59 F (2,18) = 3.55

The table-1 of analysis of covariance for Hemoglobin of Asanas and bastrika pranayama and control group indicated in significant F-ratio of 2.095 and 1.650 for the initial and final test of means respectively. However, the F-ratio for the adjusted final test mean reveal a value of 5.224 which was

significant as it was greater than the F-value of 3.59 required for significant at 0.05 level. This indicates that there was significant difference from the adjusted final means of Asanas, Bastrika Pranayama and control groups in the Hemoglobin.

Table 2: Paired adjusted final mean and difference between means of three different groups of sub maximal heart rate

Mean			Mean Difference	Critical Difference
Asana	Kapalbhati	Control		
155.030	154.777		0.253	3.049
155.030		158.764	3.734*	3.049
	154.777	158.764	3.987*	3.049

Table-2 indicates that the difference between the paired adjusted final means of Asanas, Kapalbhati and control groups in Sub maximal heart rate indicated significant value of 3.734*

and 3.987* which emphasis greater mean gain observed for Asanas, Kapalbhati and control groups Bhastrika group as compared to the control group.

Table 3: Analysis of covariance for VO2 Max.

	Asana	Kapalbhati	Control	S.V	df	SS	Mss	F-Ratio
Initial	3.149	3.293	3.210	Among Gr	2	0.073	0.037	2.035
				Within Gr	18	0.325	0.018	
Final	3.223	3.354	3.203	Among Gr	2	0.095	0.047	1.992
				Within Gr	18	0.428	0.024	
Adjusted	3.299	3.280	3.211	Among Gr	2	0.028	0.014	8.643*
				Within Gr	17	0.028	0.002	

*Significant at 0.05 levels. F (2, 17) =3.59 F (2, 18) =3.55

The table-3 of analysis of covariance for VO2 Max. of Asanas, Kapalbhati and control group indicated insignificant F-ratio of 2.035 and 1.992 for the initial test and final test of means respectively. However, the F-ratio for the adjusted final test mean reveal a value of 8.643* which was significant as it was

greater than the F-value of 3.59 required for significant at 0.05 level. This indicates that there were significant differences from adjusted final means of Asana, Kapalbhati and control groups in the VO2 Max.

Table 4: Paired adjusted final mean and difference between means of three different groups of vo2 max

Mean			Mean Difference	Critical Difference
Asana	Kapalbhati	Control		
3.299	3.280		0.019	0.06
3.299		3.211	0.088*	0.06
	3.280	3.211	0.069*	0.06

Table-4 indicates that the difference between the paired adjusted final means of Asanas, Kapalbhathi and control group in VO₂ Max. Indicated significant value of 0.088 and 0.069* which emphasis greater mean gain observed for Asanas and Kapalbhathi group as compared to the control group.

Conclusion

On the basis of result of the study following conclusions are drawn:

1. Both Asanas and Pranayama had significant contributing role over the Hemoglobin of subjects as a result of eight weeks yogic training.
2. The effect of eight weeks practice of Asanas and Pranayama was significant enough to bring about the change in the breath holding capacity.

Reference

1. Lawrance E. Pare house and Augustus T. Miller, Physiology of Exercise (St. Louis: The C.V. Mosby Company, 1963), P.63.
2. T.Pramanik, H.O. Sharma, S.Mishra, A. Mishra, R. Prajapati, S. Singh, "Immediate effect of slow pace bhastrika pranayama on blood pressure and heart rate" Journal of Alternative and Complementary Medicine, vol. 15: 3; pp.293-295; March, 2009.
3. M.M.Gore and M.L.Gharote, "Immediate effect of one minute Kapalbhathi on respiratory functions", Yoga Mimamsa, vol. XXV: 4; pp.14 – 23, 1986.
4. P.V.Karambelkar and M.V.Bhole, "Respiratory studies during Kapalbhathi for 1,2,3 & 5 minutes" Yoga Mimamsa, vol.XXVII: 1 & 2, pp. 69 – 74,1988.
5. K.s Joshi, "Yogic pranayama; breathing for long life and good health"1989, pp.8-12.
6. Dowdy, Deborah B. et al., "Effect of Aerobic Dance on Physical Work Capacity, cardio-Vascular function and Body composition of Middle Aged Women," Research Quarterly for Exercise and Sports 56 (March 1985).
7. M.M. Gore and M.V. Bhole, "Influence of pascimatana and similar type of muscular activity on pulse rate- A preliminary study," Yoga mimamsa 21 (April 1982).
8. M.V.Bhole, "Effect of yoga training on vital capacity and breath holding time" Yoga Mimansa, XIV (January, 1972).