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Effect of asana and bastrika pranayama on physiological variables of tribal students.

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Abstract

Aim: The purpose of the is to investigate the effect of asanas and bastrika pranayama on physiological variabls of tribal students.

Methodology: The subject for this study was thirty male B.A/B.SC students of seva Bharati Mahavidyalaya, Kapgri, Jhargram. The subject was equally divided into three groups namely two experimental and one control groups. The two experimental treatments were assigned at random to two group's i.e. One forAsanas 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 day in six days a week for eight weeks duration. Pre and post-test date of the entire subject 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: Haemoglobin 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 Haemoglobin and significant effect on Positive and negative breath holding capacity of the subject.

Keywords: Haemoglobin, Breath holding capacity, Asanas and Pranayama, Jhargram.

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 posses 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 student

Hypothesis

It is 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, Jhargram, W.B. Their age ranged from 19-25 years. Two experimental Groups (N=10 in each), namely Asanas (G1) and Bastrika Pranayama(G2).

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 outssets 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. The findings of the study are as follows:

Table 1: Analysis of covariance for Haemoglobin

	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. $F(2, 17) = 3.59$ $F(2, 18) = 3.55$

Table -1 shows of analysis of covariance for Haemoglobin of Asanas and bstrika pranayama and control group indicated in significant F-ratio of 2.095 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 levels. This indicates that three was significant difference from the adjusted final means of Asanas, Bastrika Pranayama and control groups in the Haemoglobin.

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 different between the paired adjusted final means of Asanas, Kapalbhati and control groups in Sub maximal heart rate indicted significant value of 3.734* and 3.987* which emphasis greater mean gain observed for Asanas, Kapalbhti 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 Mx. Of Asanas, Kapalbhati and control group indicated Insignificant F-ratio of 2.035 and 1.992 for the initial 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 three were significant differences from adjusted final means of Asana, Kapalbhti and control groups in the VO2 Max.

Table 4: Paired adjusted final mean and difference between means of three different group 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 indictes that the difference between the paired adjusted final means of Asanas, Kapalbhati and control group in VO2 Max. Indicated significant value of 0.088 and 0.069* which emphasis greater mean gain observed for Asanas and Kapalbhati group as compred 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.

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