

EFFECTS OF SELECTED YOGIC PRACTICES ON SELECTED PHYSIOLOGICAL VARIABLES OF COLLEGE MEN

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Abstract

The purpose of the present investigation is to find out the effects of selected yogic practices on selected physiological variables of college men. To achieve this purpose 60 men students were selected from department of physical education Tamilnadu Physical Education and Sports University Chennai Tamil Nadu as subjects. Their age ranged from 18 to 25 years. They were divided into three equal groups of 20 subjects each and assigned to experimental group-I, experimental group—II, and control group. In a week the experimental group-I underwent asana practices, experimental group—II underwent pranayama practices, and Control Group was not given any specific training. All the subjects underwent the test of resting pulse rate, blood pressure and breath holding time. They assessed before and after the training period of 12 weeks. The analysis of covariance was used to analyze the data. The study revealed that the resting pulse, blood pressure and breath holding time were significantly improved due to the influence of above said training.

Key words: Resting Pulse Rate, Blood Pressure, Breath Holding Time, and Pranayama.

Introduction

Exercise improves the respiratory system by increasing the amount of oxygen that is inhaled and distributed to body tissues. There are different forms of yogic practices, such as asanas, pranayarnas, meditation etc. Different yogic practices have different impacts on physiological variables. Yogic techniques are known to improve ones overall performance. Pranayama is known to be a part of yogic techniques. Patanjali in its yoga sutra describes-Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana and Samadhi as eight angas (parts) of yoga (Yoga Sutra of Patanjali, cited by Christopher, 2008). Amongst them, in the present materialistic world, the third and fourth part, Pranayama and Asana (Postures) are considered as very important parts and prescribed by modern medicine too. In this study an attempt is made to find out the effects of selected yogic practices on selected physiological variables of college men.

Methodology

To achieve this purpose, 60 men students were selected from department of physical education TNPESU Chennai Tamil Nadu as subjects. Their age ranged from 18 to 25 years. They were divided into three equal groups of 20 subjects each and assigned to experimental group-I, experimental group—II, and control group. In a weekdays the experimental group-I underwent asana practices(Padmasana, Dhanurasana, Bhujangasana, Vajrasana, Matsyasana, Paellimototsana, Artha Chakrasana and Sarvangasana) experimental group - II underwent pranayama practices(Nadi Sodhana (Alternate Nostril Breathing), Simla Vritti Pranayama (Equal Breathing), Bastrika Pranayama (Bellow Breath), 1 Ujjayi Pranayama. (Ocean Breath), and Kapalabhati Pranayama (Skull Shining Breath)) and Control group was not given any specific training. All the subjects underwent the test of resting pulse rate (pulse monitor), blood pressure (stethoscope) mid breath holding time (stop watch). They assessed before and after the training period of 12 weeks. The analysis of covariance was used to analyze the data.

Results and Discussions**TABLE —I - Analysis of Covariance on Blood Pressure(Scores in mg/dl)**

	Exp Group I	Exp Group II	Control Group	SV	SS	Df	Ms	OF
Pre – test means	98.23	95.60	97.68	B	76.7	2	38.33	3.33*
				W	655.2	57	11.49	
Post Test means	96.52	95.08	98.45	B	114.7	2	57.35	7.70*
				W	424.5	57	7.45	
Adjusted Post test means	96.21	95.54	98.30	B	80.5	2	40.23	6.15*
				W	366.6	57	6.55	

Table Value for 0.5 level 3.15

Table I shows the analyzed data on Blood Pressure. The pre test, post test and adjusted post test means of the Blood Pressure were (98.23, 95.60, 97.68) (96.52, 95.08, 98.45) (96.21, 95.54, 98.30) for the experimental group I, II and Control group respectively. The obtained 'F' ratio for pre test 3.33 post test 7.70 and adjusted post test 6.15. The obtained T ratio of post and adjusted post test were 7.70 and 6.15. The table value is 3.15 at 5% level of significance for the degree of freedom (2, 57 and 2, 56). Therefore it is proved that experimental group II has been better than the other two groups.

TABLE – II -Computation of Analysis of Covariance of Resting Pulse Rate (Scores in beats/per minutes)

	Exp Group I	Exp Group II	Control Group	SV	SS	Df	Ms	OF
Pre – test means	69.75	69.20	70.25	B	11.0	2	5.52	1.63
				W	192.7	57	3.38	
Post Test means	64.80	66.60	70.35	B	320.7	2	160.35	35.55*
				W	264.5	57	4.64	
Adjusted Post test means	64.80	66.69	70.27	B	302.3	2	151.14	32.50*
				W	259.6	57	5.52	

Table value for 0.5 level 3.15

Table II shows the analyzed data on Resting Pulse Rate. The pre test, post test and adjusted post test means of the Resting Pulse Rate were (69.75, 69.20, 70.25) (64.80, 66.60, 70.35) (64.80, 66.69, 70.27) for the experimental group I, II and Control group respectively. The obtained T ratio for pre test 1.63 post test 34.55 and adjusted post test 32.60. The obtained T ratio of post and adjusted post test were 34.55 and 32.60. The table value is 3.15 at 5% level of significance for the degree of freedom (2, 57 and 2, 56). Therefore it is proved that experimental group II has been better than the other two groups.

Table -III - Computation of analysis of Covariance of Breath Holding Time (Scores in second)

	Exp Group I	Exp Group II	Control Group	SV	SS	Df	Ms	OF
Pre – test means	42.90	42.60	37.95	B	308.1	2	154.05	2.39
				W	3673.6	57	64.45	
Post Test means	52.30	50.25	38.95	B	2067.4	2	1033.72	16.71
				W	3526.9	57	61.88	
	50.69	48.91	41.90	B	798.8	2	399.40	54.49

Adjusted Post test means				W	410.5	57	7.33	
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Table value for 0.5 level 3.15

Table III shows the analyzed data on anaerobic power. The pre test, post test and adjusted post test means of the anaerobic power were (42.90, 42.60, 37.95) (52.30, 50.25, 38.95) (50.69, 48.91, 41.90) for the experimental group I, II and Control group respectively. The obtained 'f' ratio for pre test 2.39 post test 16.71 and adjusted post test 54.49. The obtained 'f' ratio of post and adjusted post test were 16.71 and 54.49. The table value is 3.15 at 5% level of significance for the degree of freedom(2, 57 and 2, 56). Therefore it is proved that experimental group II has been tri. than the other two groups.

Tab 2: Scheffe's post Hoc Analysis Results

Post Hoc Analysis for Blood Pressure				
Asanas Group	Pranayama Group	Control Group	Mean Difference	Reqd.C.I
96.21	95.54		0.66	2.06
96.21		98.30	2.09*	2.06
	95.54	98.30	2.76*	2.06
Post Hoc Analysis for Resting Pulse Rate				
64.80	66.69		1.89*	1.73
64.80		70.27	5.47*	1.73
	66.69	70.27	3.58*	1.73
Post Hoc Analysis for Breath Holding Time				
50.69	48.91		1.77	2.18
50.69		41.90	8.79*	2.18
	48.91	41.90	7.02*	2.18

*Significant at 0.05 level.

The post hoc analysis proved that the paired differences of means between .1,..111as group and control group, pranayama group and control group were significant moderating the blood pressure. However, there were no significant differences between the treatment groups. As for the resting pulse rate, the paired differences of moans between asanas pranayama group were significant comparing to control group Further it was found that asanas was better than pranayama in moderating the resting i)tt hie rate of the subjects.

The post hoc analysis proved that the paired differences of means between asanas group and control group, pranayama group and control group were significant improving breath holding time. However, there was no significant difference between the treatment groups.

Discussion and Findings

Pramanik T, et.al. (2009), who reported that Pranayama increases frequency mid duration of inhibitory neural impulses by activating pulmonary stretch receptors above tidal volume inhalation as in Hering Bruer reflex, which bring about withdrawal of sympathetic tone in the skeletal muscle blood vessels, leading to widespread vasodilatation, thus causing decrease in peripheral resistance and thus decerasing the diastolic blood pressure. Madanmohan, et.al. (2008) tested whether yoga training of six weeks duration modulates sweating response to dynamic exercise and Improves respiratory pressures, and found Yoga training produced a marked 111.1.-tras in respiratory pressures and endurance and concluded yoga training for a short period of six weeks can produce significant improvements in respiratory muscle strength. Thus, researches by Pramanik T, et.al. (2009) and Madanmohan,

et.al. (2008) concluded that yoga intervention would improve cardiopulmonary fitness by moderating blood pressure, resting heart rate and breath holding time and the findings of this study is in agreement with these previous studies.

Conclusions

Within the limitations of the present study, the following conclusions were drawn.

1. Blood Pressure, resting pulse rate and breath holding time were significantly improved due to the influence of selected yogic practices of college men students.
2. Experimental group II (pranayama practices) significantly improved the blood Pressure, resting pulse rate and breath holding. It is greater than that of experimental group I (asana practices) and control group of college men students.
2. Experimental group I (asana practices) significantly improved the blood Pressure, resting pulse rate and breath holding time. It is greater than that of control group of college men students.

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