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Influence of yogic practices on selected physiological and psychological variables of adolescents boys

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Abstract
To achieve the purpose of the present study, thirty adolescent boys from Coimbatore were selected as subjects at random and their ages ranged from 12 to 16 years. The subjects (n=30) were randomly assigned to two equal groups as yogic practices (YP) and control group (CG) in an equivalent manner. The competitive sport anxiety inventory – 2 was used to measure cognitive anxiety, somatic anxiety and self confidence. A sphygmomanometer was used to measure the systolic blood pressure and diastolic blood pressure. A biomoniter was used to measure the heart rate. To find out the difference between the two groups analysis of covariance (ANCOVA) was used. The yogic practices group showed a decreased level of cognitive anxiety, somatic anxiety, heart rate and increased level of self confidence than the control group owing to the training effects of yogic practices. In case of diastolic blood pressure and systolic blood pressure there was no significant difference between yogic exercises and control group.

Keywords: Yoga, physiology, psychology, adolescent boys.

INTRODUCTION

Yoga is a science practiced in India over thousands of years. It produces consistent physiological changes and have sound scientific basis (Iyengar, 1968). Yogic techniques are known to improve one's overall performance and work capacity. It may be said that the goal of yoga is to bring about a complete harmony within the individual. It is necessary to note that the nature of all Yogic practices is psychological and physiological.

Some exercises emphasizing the control of mental processes directly are more psychological. Other exercises are more physical or physiological. It is this later part of yogic practices that has become more popular and is being extensively used for the development and promotion of health and fitness. Yoga has been practised in India for over two millennia. Stories and legends from ancient times testify to the existence of yoga, and to the practitioners and divinities associated with it. (Ananda, 1982). The purpose of the study was to find out the influence of yogic practices on selected physiological and psychological variables of adolescent boys.

METHODOLOGY

To achieve the purpose of the present study, thirty adolescent boys from Coimbatore were selected as subjects at random and their ages ranged from 12 to 16 years. The subjects were divided into two equal groups. The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects (n=30) were randomly assigned to two equal groups as yogic practices (YPG) and control group (CG) in an equivalent manner. The yogic practices group participated for a period of six weeks for alternate three days in a week and the post-tests were taken.

The competitive sport anxiety inventory – 2 was used to measure cognitive anxiety, somatic anxiety and self confidence. A sphygmomanometer was used to measure the systolic blood pressure and diastolic blood pressure. The unit of measurement was in mm Hg. A biomoniter was used to measure the heart rate of the subjects. The unit of measurement was in beats per minute. To find out the difference between the two groups analysis of covariance (ANCOVA) was used.

RESULTS AND DISCUSSION

The detailed procedure of analysis of data and interpretation were given below,

Table I. Summary of Mean for the Pre and Post Tests on Selected Physiological and Psychological Variables of Adolescent Boys

S. No	Variables	Yogic Practices Group				Control Group			
		Pre	SD (±)	Post	SD (±)	Pre	SD (±)	Post	SD (±)
1	Cognitive Anxiety	23.00	4.53	18.86	3.39	24.20	2.39	22.86	3.73
2	Somatic Anxiety	22.86	3.81	20.33	3.17	22.20	1.42	21.73	1.62
3	Self Confidence	28.00	3.27	29.90	2.80	27.40	2.72	26.93	2.78
4	Heart Rate	77.06	7.48	66.60	2.69	75.26	4.62	74.53	4.43
5	Diastolic Blood Pressure	80.00	6.54	78.66	5.16	72.40	5.51	72.40	5.51
6	Systolic Blood Pressure	119.33	7.03	117.33	4.57	115.33	6.39	114.66	5.16

The table I shows that the pre and post test means on selected physiological and psychological variables of adolescent boys.

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Table II. Analysis of Variance of Pre Test Scores on Selected Physiological and Psychological Variables of Adolescent Boys

Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Squares	F-Value
1	Cognitive Anxiety	BG	10.80	1	10.80	0.82
		WG	368.40	28	13.15	
2	Somatic Anxiety	BG	3.33	1	3.33	0.40
		WG	232.13	28	8.29	
3	Self Confidence	BG	2.70	1	2.70	0.29
		WG	253.60	28	9.05	
4	Heart Rate	BG	24.30	1	24.30	0.62
		WG	1083.86	28	38.71	
5	Diastolic Blood Pressure	BG	43.20	1	43.20	1.17
		WG	1025.60	28	36.62	
6	Systolic Blood Pressure	BG	120.00	1	120.00	2.65
		WG	1266.66	28	45.23	

* P < 0.05 Table F, df (1,28) (0.05) = 4.19

In table II, the results of analysis of variance of pre test scores on cognitive anxiety (0.82), somatic anxiety (0.40), self confidence (0.29), heart rate (0.62), diastolic blood pressure (1.17) and systolic blood pressure (2.65) were lesser than the table value of 4.19 indicating that it was not significant for the degrees of freedom (1,28) at 0.05 level of confidence indicating that the random sampling was successful.

Table III. Analysis of Variance of Post Test Scores on Selected Physiological and Psychological Variables of Adolescent Boys

Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Squares	F-Value
1	Cognitive Anxiety	BG	120.00	1	120.00	9.39*
		WG	357.46	28	12.76	
2	Somatic Anxiety	BG	14.70	1	14.70	2.31
		WG	178.26	28	6.36	
3	Self Confidence	BG	38.53	1	38.53	4.91*
		WG	219.33	28	7.83	
4	Heart Rate	BG	472.03	1	472.03	35.02*
		WG	377.33	28	13.47	
5	Diastolic Blood Pressure	BG	12.03	1	12.03	0.89
		WG	377.33	28	13.47	
6	Systolic Blood Pressure	BG	53.33	1	53.33	2.24
		WG	666.66	28	23.81	

* P < 0.05 Table F, df (1,28) (0.05) = 4.19

In table III, the results of analysis of variance of post test scores on cognitive anxiety (9.39), self confidence (4.91), heart rate (35.02), were greater than the table value of 4.19 indicating that it was significant for the degrees of freedom (1,28) at 0.05 level of confidence. However the obtained F value of somatic anxiety (2.31), diastolic blood pressure (0.89) and systolic blood pressure (2.24) were lesser than the table value of 4.19 indicating that it was not significant for the degrees of freedom (1,28) at 0.05 level of confidence.

Table IV. Analysis of Covariance of Selected Physiological and Psychological Variables of Adolescent Boys

Sl. No	Variables	Adjusted Mean		Source of Variance	Sum of Squares	df	Mean Squares	F-Value
		Yoga	Control					
1	Cognitive Anxiety	19.31	22.41	BG	70.00	1	70.00	12.59*
				WG	150.09	27	5.55	
2	Somatic Anxiety	20.13	21.93	BG	24.12	1	24.12	7.07*
				WG	92.05	27	3.40	
3	Self Confidence	28.93	27.19	BG	22.60	1	22.60	21.96*
				WG	27.78	27	1.02	
4	Heart Rate	66.37	74.75	BG	514.78	1	514.78	44.63*
				WG	311.42	27	11.53	
5	Diastolic Blood Pressure	75.60	75.45	BG	0.11	1	0.11	0.02
				WG	134.33	27	4.97	
6	Systolic Blood Pressure	116.07	115.93	BG	0.13	1	0.13	0.02
				WG	161.40	27	**5.97**	

* P < 0.05 Table F, df (1,27) (0.05) = 4.21

In table IV, the results of analysis of covariance on cognitive anxiety (12.59), somatic anxiety (7.07), self confidence (21.96), heart rate (44.63) were greater than the table value of 4.21 indicating that it was significant for the degrees of freedom (1,27) at 0.05 level of confidence. However, the obtained F value of diastolic blood pressure (0.02) and systolic blood pressure (0.02) were lesser than the table value of 4.21 indicating that it was not significant for the degrees of freedom (1,27) at 0.05 level of confidence.

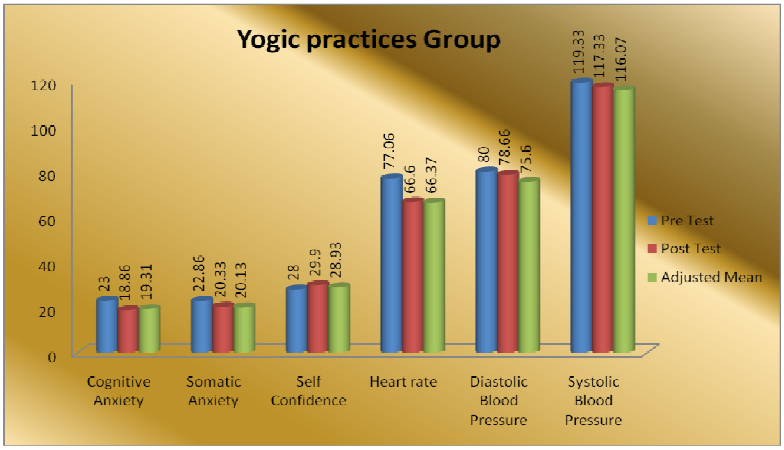

Fig I. Shows the Mean Values of Yogic Group on Physiological and Psychological Variables of Adolescent Boys

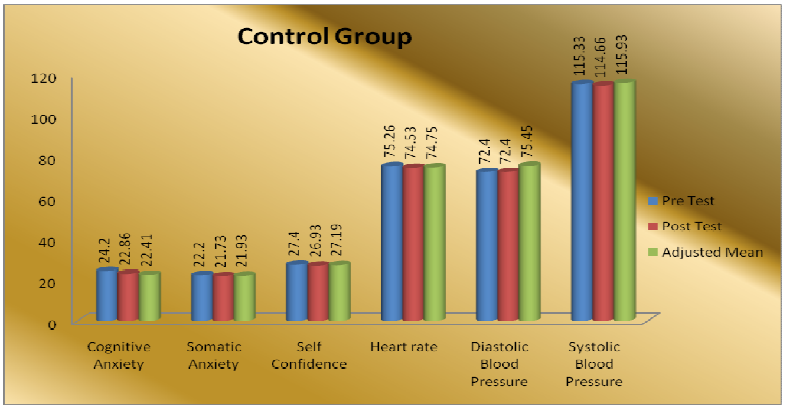

Figure II. Shows the Mean Values of Control Group on Physiological and Psychological Variables of Adolescent Boys

CONCLUSIONS

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

- The yogic practices group showed a decreased level of cognitive anxiety, somatic anxiety and heart rate than the control group owing to the training effects of yogic practices.
- Similarly, the yogic practices group showed an increased level of self confidence than the control group owing to the training effects of yogic practices.
- In case of diastolic blood pressure and systolic blood pressure there was no significant difference between yogic practices and control group.

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