

Research Paper :

Effect of physical training and yogic practices, on selected physiological variables and motor ability components among college men students

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ABSTRACT

Yoga plays an important role by bringing the therapeutic effect in Asthmas, Diabetes, Hypertension and Respiratory troubles. Some yoga has both preventive as well as curative values. Positive changes in the life style of the people can be brought through Yoga. During the period of education, Yoga can make them aware of their body and further make them realize the need of emotional and physical well being. The present study has been mainly designed to find out the effect of selected yogic practices and physical training on motor ability and physiological variables of college men. To accomplish the purpose of this study, the experimental design, the subjects, the criterion variables and test of measuring them and their variables and methods to apply them have been systematically presented. Thirty subjects were selected randomly from the Alagappa Arts College in Karaikudi. For the study, the average age of the subject was 18 to 21 years; the selected students were further divided randomly into three group's namely yogic practices, Physical training and control groups. All the subjects were normal and healthy male students, the sample was considered as the true representative of population. The number of each group was ten.

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Key words : Flexibility, Agility, Resting Pulse rate, Breath holding time

Yoga plays an important role by bringing the therapeutic effect in Asthmas, Diabetes, Hypertension and Respiratory troubles. Some yoga has both preventive as well as curative values. Positive changes in the life style of the people can be brought through Yoga. During the period of education, Yoga can make them aware of their body and further make them realize the need of emotional and physical well being.

The adaptations in the oxygen transporting system to regular exercise of various intensity, duration and frequency and reversible, with the extension of heart size, which in many individuals may remain enlarged. Bed rest is an extreme form of inactivity and the "Dallar study" provides a good illustration of its negative effects on maximum oxygen uptake and other functions.

When highly trained individuals stop training, Vo₂ maximum decreases overtime because maximal cardiac output and oxygen extraction decreases in stroke volume since the heart rate and Vo₂ difference remains the same or increased. This sudden decrease in maximal stroke volume appears to be due to the rapid loss of plasma volume with detaining.

Loren Fishman and Ellen Saltonstall investigated about the Yoga in pain management, Yoga is a practice that has evolved and survived over thousands of years, its teachings adapting too many cultures and eras of history. Until recently, yoga was known in the West mostly for the extraordinary feats of its adepts: voluntarily stopping and then restarting of the heart, holding the breath for extended periods, or contortionist positions of the body. Now, with more cross-fertilization in all aspects of physical fitness, yoga has become main stream. What may be lost in this process is the greater picture where yoga came from, what it is, and its many uses, including medical pain relief. This chapter is meant to acquaint the reader more fully with the practice of yoga and its potential roles within an integrative pain medicine practice.

The present study has been mainly designed to find out the effect of selected yogic practices and physical training on motor ability and physiological variables of college men. To accomplish the purpose of this study, the experimental design, the subjects, the criterion variables and test of measuring them and their variables and methods to apply them have been systematically presented.

Selection of subjects:

“Thirty subjects were randomly selected from the Alagappa Arts College in Karaikudi. For the study, the average age of the subject was 18 to 21 years; the selected students were further randomly divided into three group’s namely yogic practices, Physical training and control groups. All the subjects were normal and healthy male students, the sample was considered as the true representative of population. The number of each group was ten.

OBSERVATIONS AND DISCUSSION

The experimental findings as influenced by different parameters are discussed below:

Result of resting pulse rate:

Table 1 shows the resting pulse rate of three groups.

The pre-test means of resting Pulse rate were 79.1 for control group, 78.8 for physical training group and 79 for yogic practice. The obtained mean square F ratio 0.003 was lesser than the table F ratio 3.37 at 0.05 level for the degrees of freedom 2 and 27.

The post means of resting pulse rate were 78.2 for control group, 71.4 for physical training group and 75 for yogic practice group. The obtained mean square F ratio 5.02 was greater than the table F ratio 3.37 at 0.05 level for the degrees of freedom 2 and 27.

The adjusted post test means for resting pulse rate were 78.19 for control group and 71.39 for physical training group and 75 for yogic practice group. The obtained mean square 10.25 was greater than the table F ratio 3.37 at 0.05 level for the degrees of freedom 2 and 26. Hence, it was significant and Scheffe’s post hoc test was used.

Table 2 shows that adjusted post test means of three groups. The adjusted means for control, yogic practice and physical training groups were 78.19, 71.39 and 75,

Table 2: Ordered adjusted mean differences of scheffe’s post hoc test of resting pulse rate (Scores in beats/minute)

Control group	Physical training group	Yogic practice group	Mean difference	C.I value
78.19	75.00	71.39	3.19	3.07
78.19			6.8	3.07
	75.00	71.39	3.61	3.07

respectively. The mean difference between control anti yogic practice group, control and physical training and yogic practice and physical training groups were 3.19, 6.8 and 3.61, respectively. The Scheffe’s confidence interval value was 3.07. Hence, all the three comparisons were significant.

Result of breath holding time:

Table 3 shows the breath holding time of three groups. The pre-test means of breath holding time were

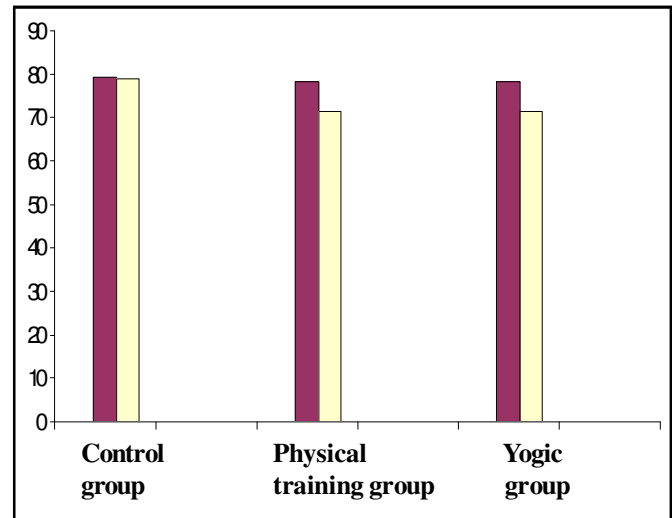


Fig. 1: Shows the pre-test and post test mean difference on resting pulse rate of control physical training and yogic groups (Scores in beats/ minute)

Table 1: Computation analysis of covariance of pretest and posttest of resting pulse rate scores of control, physical training and asanas groups (Scores in beats/minute)

	Control group (N=10)	Physical training group (N=10)	Yogic practice group (N=10)	Source of variance	Sum of square	df	Means squares	'F' ratio
Pre-test means	79.1	78.8	79	B	0.24	2		
				W	79.70	27	0.003	3.37
Post-test means	78.2	71.4	75	B	115.74	2		
				W	23.04	27	5.02	3.37
Adjusted Post test means	78.19	71.39	75	B	71.25	2		
				W	6.95	26	10.25	3.37

B = Between group means

W = Within group means

Table F—ratio at 0.05 level of confidence for 2 and 27(df) = 3.352 and 26(df) 3.37

Table 3: Computation analysis of covariance of pretest and posttest of breath holding time scores of control, physical training and Asanas groups (Scores in beats/minute)

	Control group (N=10)	Physical training group (N=10)	Yogic practice group (N=10)	Source of variance	Sum of squares	Means df squares	'F' ratio
Pre-test Means	53.10	54.70	53.70	B	13.067	2	6.533
				w	617.100	27	22.856
Post-test Means	53.50	58.40	59.40	B	199.40	2	99.70
				w	513.30	27	19.011
Adjusted Post-test Means	54.13	57.65	59.51	B	148.449	2	74.225
				w	51.383	26	1.976

B = Between group means

W = Within group means

Table F—ratio at 0.05 level of confidence for 2 and 27(df) = 3.352 and 26(df) 3.37

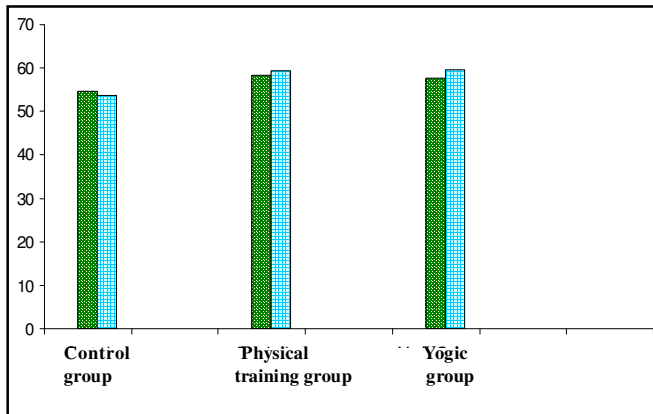


Fig. 2: Bar Diagram Shows the pre-test and post test mean difference on Breath Holding time of control physical Training and Yogic Groups (Scores in beats/ minute)

53.10 for control group, 54.70 for physical training group and 53.70 for yogic practice. The obtained means df square 6.533 was lesser than the table F ratio 3.37 at 0.05 level for the degrees of freedom 2 and 27.

The post means breath holding time were 53.50 for control group, 58.40 for physical training group and 59.40 (for yogic practice group. The obtained means of square 99.70 was greater than the table F ratio 3.37 at 0.05 level for the degrees of freedom 2 and 27.

The adjusted post test means for Breath holding time were 54.134 for control group and 57.650 for physical training group and 59.515 for yogic practice group. The obtained means df squares 74.225 was greater than the table F ratio 3.77 at 0.05 level for the degrees of freedom 2 and 26. Hence, it was significant and Scheffe's post hoc test was used.

Table 4 shows that adjusted post test means of three groups. The adjusted means for control, yogic practice and physical training groups were 54.134, 57.650 and 59.515, respectively.

Table 4: Ordered adjusted mean differences of scheffe's post hoc test of breath holding time (Scores in beats/minute)

Control group	Physical training group	Yogic practice group	Mean difference	C.I. value
54.134	57.650	59.515	3.516	1.630
54.134	57.650	59.515	1.865	1.630
54.134	57.650	59.515	5.381	1.630

59.515, respectively. The mean difference between control and yogic practice groups, control and physical training and yogic practice and physical training groups were 3.516, 1.865 and 5.381, respectively. The Scheffe's confidence interval value was 3.02. Hence, all the three comparisons were significant.

Result of flexibility:

Table 5 shows the flexibility of three groups. The pre-test means of flexibility were 10.00 for control group, 11.70 for physical training group and 12.50 for yogic practice. The obtained means df squares 16.300 was lesser than the table F-ratio 3.37 at 0.05 level for the degrees of freedom 2 and 27.

The post means flexibility were 11.40 for control group, 13.50 for physical training group and 16.50 for yogic practice group. The obtained means df squares 65.700 was greater than the table F ratio 3.77 at 0.05 level for the degrees of freedom 2 and 27.

The adjusted post-test means of flexibility were 12.385 for control group and 13.289 for physical training group and 15.726 for yogic practice group. The obtained means df squares 26.575 was greater than the table F ratio 3.37 at 0.05 level for the degrees of freedom 2 and 26. Hence, it was significant and Scheffe's post hoc test was used.

Table 5: Computation analysis of covariance of pretest and posttest of flexibility scores of control, physical training and asanas groups

	Control group (N=10)	Physical training group (N=10)	Yogic practice group (N=10)	Source of variance	Sum of squares	Means squares	df	'F' ratio
Pre-test Means	10.00	11.70	12.50	B	32.60	16.300	2	3.37
Post-test Means	11.40	13.50	16.50	w	204.60	7.578	27	
Adjusted Post-test Means	12.385	13.289	15.726	B	131.40	65.700	2	3.37
				w	231.40	8.570	27	
				B	53.150	26.575	2	3.37
				w	130.051	5.002	26	

B = Between group means

w = With in group means

Table F —ratio at 0.05 level of confidence for 2 and 27(df) = 3.352 and 26(df) = 3.37

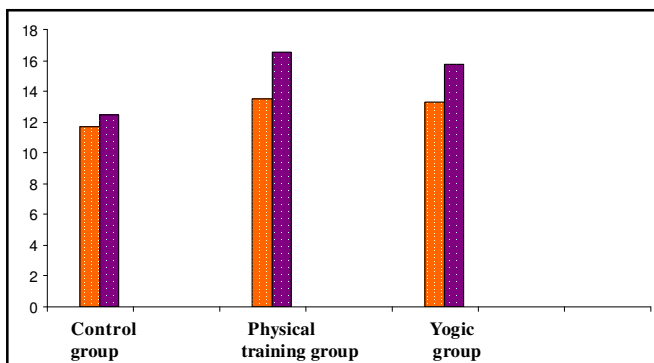


Fig. 3: Bar Diagram Shows the pre-test and post test mean difference on flexibility of control physical Training and Yogic Groups (Scores in beats/ minute)

Table 6 shows that adjusted post test means of three groups. The adjusted means for control, yogic practice and physical training groups were 12.385 ,13.289.and 15.726, respectively. The mean difference between control and yogic practice groups, control and physical training and yogic practice and physical training groups

Table 6: Ordered adjusted mean differences of scheffe's post HOC test flexibility (Scores in beats/minute)

Control group	Physical training group	Yogic practice group	Mean difference	C.I value
12.385	13.289		0.904	2.596
	13.289	15.726	2.437	2.296
12.385		15.726	3.341	2.596

were 0.904, 2.437 and 3.341, respectively. The Scheffe's confidence interval value was 2.596. Hence, all the three comparisons were significant.

Result of agility:

Table 7 shows the agility of three groups. The pre-

test means of agility were 10.13 for control group, 9.65for physical training group and 10.39 for yogic practice. The obtained mean square 235 was lesser than the table F ratio 3.37 at 0.05 level for the degrees of freedom 2 and 27.

The post means of agility were 9.68 for control group, 9.08 for physical training group and 9.47 for yogic practice group. The obtained mean square 1.52 was lesser than the table F ratio 3.37 at 0.05 level for the degrees of freedom 2 and 27.

The adjusted post test means for agility were 9.43 for control group and 9.05 for physical training group and 9.95 for yogic practice group. The obtained mean square 2.25 was lesser than the table F ratio 3.37 at 0.05 level for the degrees of freedom 2 and 26.Hence it was significant and Scheffe's post hoc test was used.

The results of the adjusted post tests showed that there was a significant difference among Control, Physical training and Yogic practice groups on Resting Pulse rate, Breath holding time and Flexibility, Agility. It may be due to nature of the selected physical training and yogic

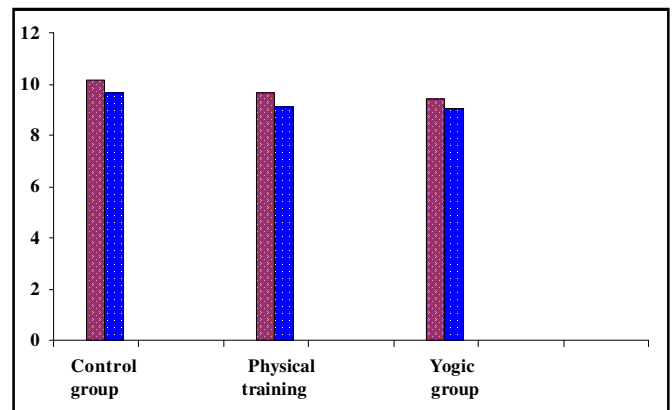


Fig. 4: Bar diagram Shows the pre-test and post test mean difference on agility of control physical training and yogic groups (Scores in beats/ minute)

Table 7: Computation analysis of covariance of pretest and posttest of agility scores of control physical training and asanas groups

	Control group (N=10)	Physical training group (N=10)	Yogic practice group (N=10)	Source of variance	Sum of squares	DB	Means squares	'F' Ratio
Pretest Means	10.13	9.65	10.39	B	1.14	2	2.35	3.37
				w	0.60	27		
Post test Means	9.68	9.08	9.47	B	0.93	2	1.52	3.37
				w	0.61	27		
Adjusted Posttest Means	9.43	9.05	9.95	B	0.45	2	2.25	3.37
				w	0.20	26		

B = Between group means

w = With in group means

Table F —ratio at 0.05 level of confidence for 2 and 27(df) = 3.352 and 26(df) = 3.37

practice.

Discussion on Hypothesis:

Hypothesis is that there would be significant differences in Resting pulse rate, Breath holding time und flexibility due to the influence of Yogic practice and insignificant differences in agility among college men. The finding of the study showed that there was significant differences in Resting pulse rate, Breath holding lime and Flexibility due to the influence Physical training.

The finding of' the study showed that there was insignificant differences in Agility due to the influence of Physical training and Yogic Practice.

Conclusions:

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

The six weeks of physical training and yogic practices showed significant improvement in Resting pulse rate, Breath holding time and Flexibility, Agility among the college men students.

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