

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 brining the therapeutic effect in Asthmas, diabetes, hypertension and respiratory troubles. Some yoga has both preventive as well as curative values. Positive charges in the life style of the people can brought through yoga. During the period of education, Yoga can make them aware of their bodies 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 applying them have been systematically presented. Thirty subjects were selected at random 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 at random 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.

■ KEY WORDS : Flexibility, Agility, Resting Pulse rate, Breath holding time

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Yoga plays an important role by brining the therapeutic effect in asthmas, diabetes, hypertension and respiratory troubles. Some yoga has both preventives as well as curative values. Positive charges in the life style of the people can be brought through yoga. During the period of education, yoga can make them aware of their bodies 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, VO_2 maximum decreases overtime because maximal cardiac output and oxygen extraction decrease in stroke volume since the heart rate and VO_2 difference remained the same or increased. This sudden decrease maximal stroke volume appears to be due to the rapid loss of plasma volume with detaining (Brughelli *et al.*, 2008).

Fishman and Saltonstall (2008), the study 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 of where yoga came from, what it is, and its many uses, including medical pain relief. This paper is meant to acquaint the reader more fully with the practice of yoga and its potential roles within an integrative pain medicine practice (Barrow *et al.*, 1979; Banumgartner *et al.*, 1983).

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 applying them have been systematically presented.

■ METHODOLOGY

Selection of subjects :

Thirty subjects were selected at random 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 at random 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 results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

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 F ratio 0.0003 was lesser than the table F ratio 3.37 at 0.05 level for the degrees

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	0.003	3.37
				W	79.70	27		
Post test means	78.2	71.4	75	B	115.74	2	5.02	3.37
				W	23.04	27		
Adjusted post test means	78.19	71.39	75	B	71.25	2	10.25	3.37
				W	6.95	26		

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 1A : 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



Table 2 : 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
Pretest means	53.10	54.70	53.70	B	13.067	2	6.533	3.37
				W	617.100	27	22.856	
Post test means	53.50	58.40	59.40	B	199.40	2	99.70	3.37
				W	513.30	27	19.011	
Adjusted posttest means	54.13	57.65	59.51	B	148.449	2	74.225	3.37
				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

Table 2a : 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		3.516	1.630
	57.650	59.515	1.865	1.630
54.134		59.515	5.381	1.630

Table 3 : 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 df	squares	'F' Ratio
Pretest means	10.00	11.70	12.50	B	32.60	2	16.300	3.37
				W	204.60	27	7.578	
Post test means	11.40	13.50	16.50	B	131.40	2	65.700	3.37
				W	231.40	27	8.570	
Adjusted posttest means	12.385	13.289	15.726	B	53.150	2	26.575	3.37
				W	130.051	26	5.002	

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

Table 3a : 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

Table 4 : Computation analysis of covariance of pretest and posttest of agility scores of control, physical training and sanas 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

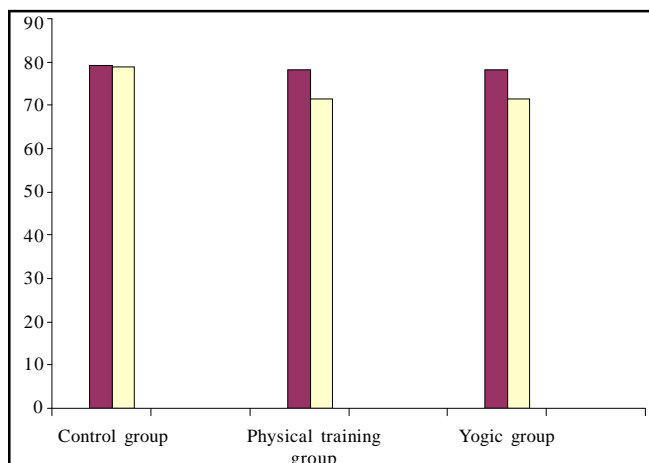


Fig. 1 : Bar diagram shows the pre-test and post test mean difference on resting pulse rate of control physical training and yogic groups (Scores in beats/ minute)

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 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 F-ratio 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 1A 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, respectively. The mean difference between control and physical training groups, control and yogic practice group, control and physical training and yogic practice 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 2 shows the breath holding time of three groups.

The pre-test means of breath holding time were 53.10 for control group, 54.70 for physical training group and 53.70 for yogic practice. The obtained F ratio 6.533 was lesser than the table F ratio 0.286 at 0.05 level for the degrees of freedom 2 and 27.

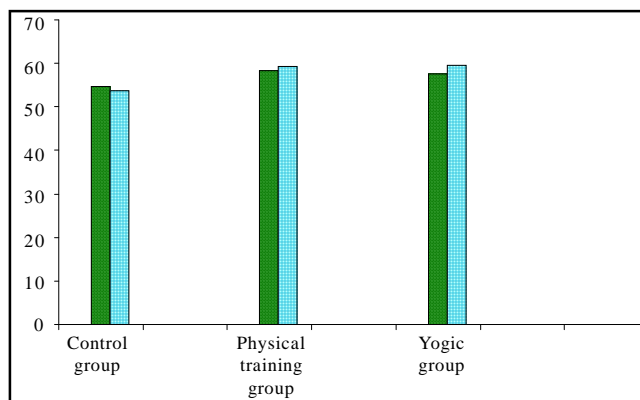


Fig. 2 : Bar diagram shows the pre-test and post test mean difference on breath holding time of control physical training and yogic groups (Scores in beats/ minute)

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 F ratio 99.70 was greater than the table F ratio 5.244 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 F ratio 74.225 was greater than the table F ratio 37.558 at 0.05 level for the degrees of freedom 2 and 26.1. Hence, it was significant and Scheffe's post hoc test was used.

Table 2A 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. 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. Rathi (2014) worked on the relationship of breath holding with vital capacity among swimmers.

Result of flexibility :

Table 3 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 F ratio 16.300 was lesser than the table F-ratio 2.151 at 0.05 level for the degrees of freedom 2 and 27 (Bhalerao, 2014).

The post means flexibility were 11.40 for control group, 13.50 for physical training group and 16.50 for



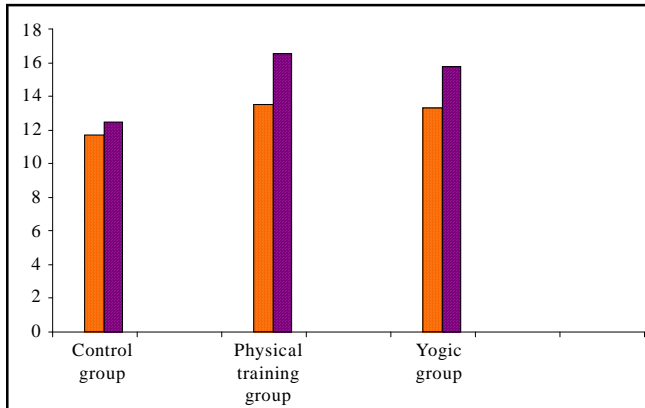


Fig. 3 : Bar diagram shows the pre-test and post test mean difference on flexibility of control physical training and yogic groups (Scores in beats/ minute)

yogic practice group. The obtained F ratio 65.700 was greater than the table F ratio 7.666 at 0.05 level for the degrees of freedom 2 and 27 (Qureshi, 2014).

The adjusted post test means Flexibility were 12.385 For control group and 13.289 for physical training group and 5.726 for yogic practice group. The obtained F ratio 26.575 was greater than the table F ratio 5.313 at 0.05 level For the degrees of freedom 2 and 26. Hence, it was significant and Scheffe's hoc lest was used.

Table 3A 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. The mean difference between control and yogic practice groups, control and physical training and yogic practice and physical training groups 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. Bhalerao, 2014 made a study on the effect on badminton players by selected exercises of flexibility.

Result of Agility :

Table 4 shows the Agility of three groups.

The pre-test means of Agility were 10.13 for control group, 9.65 for physical training group and 10.39 for yogic practice. The obtained F ratio 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 F ratio 1.52 was greater than the table F ratio 3.37 at 0.05 level for the degrees

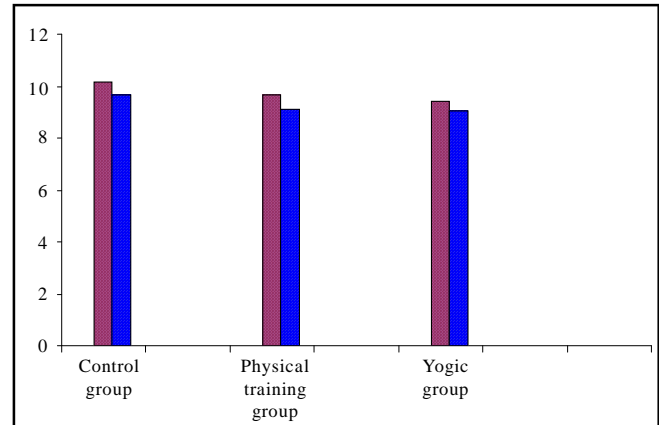


Fig. 4 : Bar diagram shows the pre-test and post test mean difference on agility of control physical training and yogic groups (Scores in beats/ minute)

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 F ratio 2.25 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.

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 practice (Davis *et al.*, 2008; Greednberg and Poram, 1986).

Hypothesis that there would be significant differences in resting pulse rate, breath holding time and 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 time 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 (Khanna and Jeyaprakash, 1990; Katie, 2008).

Conclusion :

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

The six weeks of physical training and yogic practices might be significant improvement in Resting pulse rate, Breath holding time and Flexibility, Agility

among the college men students.

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