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Effects of Yogic Practices and Physical Exercise on Academic Achievement on Muscular Strength Endurance and Flexibility of School Boys

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Abstract:
The purpose of the study was to find out the effects of yogic practices and physical exercise on academic achievement on muscular strength endurance and flexibility of adolescent boys.whole bodies of works both ancient (Pre-Christian) and more modern dealing with various aspects of yoga and yoga philosophy, testifying to the continued relevance of yoga as a discipline (Mira-Mehta, 1994). Netz and Lidor (2003) Yoga is an ancient Indian philosophy based on diverse breathing, stretching, and meditation exercises. Eighty untrained school students (mean age = 16 +/- 1.5yr) started in one of the following groups: yoga practice group [YPG, N = 20 and PEG, N = 20, CYPPEG, N = 20, or a control group (CG, N =20). Training took place on three alternating days per week for 12 weeks. Assessments of muscular strength endurance and flexibility performance,(modified sit ups and sit and reach test) were determined by pre-training (T1), and after 12 weeks of post -training . Results of the study were: (approximately 11%) in all training groups and muscular strength endurance and flexibility increased at T2 (approximately 3%) only in CYPPEG. Finally, he concluded that training combination of yogic practices and physical exercise group improved the muscular strength endurance and flexibility.

1. Introduction

The internal organs of the body mostly do not get proper exercise, while yogasana gives sufficient exercise to the internal organs of the body. Yogasanas have a greater impact on the mind and the senses than the other physical exercises with the result that yogasanas help to develop one's physical and mental powers to calm the mind and control the senses. Yogasanas make possible not only physical and mental development but also intellectual and spiritual development. Asanas require the least possible use of physical energy. Yogasanas are called a 'non-violent activity' (Sharma, 1984). Yoga has a hoary past. The importance for the spiritual attainment has been recognized throughout the ages by all the systems of Indian philosophy. There is no doubt that the essence of yoga has been considered in the spiritual upliftment of man. One may question as to how then yoga is related to the physical education and whether yoga will not be pulled down from its highest pedestal in doing this. It is necessary, therefore, to clear the concepts of yoga and physical education first (Gharote, 1976).

2. Methodology

To achieve these purpose eighty male students with the age group of 16 ± 1.5 years were recruited from Govt. boys' school, salem as a subjects. They were randomly divided in to four equal groups of 20 subjects each and assigned to experimental group-I, experimental group-II, experimental group-III and control group. The experimental group-I underwent yogic practices, Experimental group-II underwent physical exercise training, Experimental group-III underwent combination of yogic practices with physical exercise and Control group was not given any specific training. The following variables were selected: muscular strength endurance (modified sit ups test), flexibility (sit and reach). They were assessed before and after the training period of twelve weeks. The analysis of t test, analysis of variance, and analysis of covariance was used to analyze the data to find out the overall significant among the three groups.

Variables	Mean	N	S. D.	S.E.M.	M.D.	't' ratio
Muscular Strength Endurance Pre-Test	25.0000	20	1.7770	0.099	1.2500	12.583*
Muscular Strength Endurance Post-Test	26.2500	20	1.6819			
Flexibility Pre-Test	27.2000	20	1.7947	.1141	2.05	17.962*
Flexibility Post Test	29.2500	20	1.9160			

Table 1: Significance of Mean Gain or Loses between Pre and Post of Yogic Practices Group on Muscular Strength Endurance and Flexibility of School Boys
Significant at 0.05 levels

The obtained‘t’ ratio’s for pre and post test mean difference in the yogic practices group aerobic capacity was (12.58) and flexibility was (17.96) respectively. The obtained‘t’ ratio is when compared with the table value of 2.09 for the degrees of freedom (1, 19) it was found to be statistically significant at 0.05 level of confidence.

Variables	Mean	N	S.D	S.E.M	M.D	‘t’ ratio
Muscular Strength Endurance Pre-Test	24.9000	20	1.3338	0.16	1.90	11.83*
Muscular Strength Endurance Post-Test	26.8000	20	1.1965			
Flexibility Pre-Test	27.0500	20	1.4318	0.216	1.25	5.78*
Flexibility Post Test	28.3000	20	1.2607			

Table 2: Significance of Mean Gain or Loses between Pre and Post of Physical Exercise Group on Muscular Strength Endurance and Flexibility of School Boys Significant at 0.05 levels

The obtained‘t’ ratio’s for pre and post test mean difference in the physical exercise group muscular strength endurance was (11.83) and flexibility was (5.78) respectively. The obtained‘t’ ratio is when compared with the table value of 2.09 for the degrees of freedom (1, 19) it was found to be statistically significant at 0.05 level of confidence.

Variables	Mean	N	S.D	S.E.M	M.D	‘t’ ratio
Muscular Strength Endurance Pre-Test	24.7000	20	.9787	0.1094	2.65	24.21*
Muscular Strength Endurance Post-Test	27.3500	20	.9881			
Flexibility Pre-Test	27.0500	20	1.7313	0.010	3.10	31.00*
Flexibility Post Test	30.1500	20	1.8144			

Table 3: Significance of Mean Gain or Loses between Pre and Post of Combination of Yogic Practices and Physical Exercise Group on Muscular Strength Endurance and Flexibility of School Boys Significant at 0.05 levels

The obtained‘t’ ratio’s for pre and post test mean difference in the combination of yogic practices and physical exercise groupmuscular strength endurance was (24.21) and flexibility was (31.00) respectively. The obtained‘t’ ratio is when compared with the table value of 2.09 for the degrees of freedom (1, 19) it was found to be statistically significant at 0.05 level of confidence.

Variables	Mean	N	S.D	S.E.M	M.D	‘t’ ratio
Muscular Strength Endurance Pre-Test	24.6500	20	1.7252	0.081	0.15	1.83
Muscular Strength Endurance Post-Test	24.8000	20	1.6733			
Flexibility Pre-Test	27.1000	20	1.5526	0.050	0.050	1.00
Flexibility Post Test	27.1500	20	1.5985			

Table 4: Significance of Mean Gain or Loses between Pre and Post of Control Group on Muscular Strength Endurance and Flexibility of School Boys
** Significant at 0.05 level*

The obtained‘t’ ratio’s for pre and post test mean difference in the control group of muscular strength endurance was (1.83) and flexibility was (1.00) respectively. The obtained‘t’ ratio is when compared with the table value of 2.09 for the degrees of freedom (1, 19) it was found to be statistically not significant at 0.05 level of confidence.

Variables	Mean	N	S.D	S.E.M	M.D	‘t’ ratio
MUSCULAR STRENGTH ENDURANCE	Between Groups	1.638	3	.546	.246	.864
	Within Groups	168.550	76	2.218		
FLEXIBILITY	Between Groups	.300	3	0.011	.037	.990
	Within Groups	202.900	76	2.670		

Table 5: Analysis of Variance on Pre-Test Means Amongypg, PEG, CYPPEGAND CG on Muscular Strength Endurance and Flexibility of School Boys
** Significant at 0.05 level*

In testing the pre test means among of yogic practices group (YPG), physical exercise group,(PEG), combination of yogic practices with physical exercise group Control group(CG) on criterion variables, the obtained f-ratios are: 0.24 (Muscular strength endurance),

0.037 (Flexibility). The obtained F- ratios were statistically not significant since they failed to reach the critical value (3.16) at 0.05 level. Thus the obtained results on pre test mean confirm the random assignment of subjects in to different groups was successful.

Variable	Source of variance	Sum of Squares	df	Mean Square	F	Sig.
MUSCULAR STRENGTH ENDURANCE	Between Groups	72.100	3	24.033	11.962	.000
	Within Groups	152.700	76	2.009		
FLEXIBILITY	Between Groups	99.337	3	33.113	11.924	.000
	Within Groups	211.050	76	2.777		

Table 6: Analysis of Variance on Post-Test Means among YPG, Peg, CYPPEG and Cg on Muscular Strength Endurance and Flexibility of School Boys
** Significant at 0.05 level*

In testing the post test means among of yogic practices group (YPG), physical exercise group,(PEG), combination of yogic practices with physical exercise group (CYPPEG) and Control group(CG) on criterion variables, the obtained f-ratios are: 11.96 (Muscular strength endurance), 11.92 (Flexibility). The obtained F- ratios were found as statistically significant on Muscular strength endurance and flexibility. Since they exceeds the required critical value (3.15 df3, 76). Thus the obtained results on adjusted means statistically confirm the differences exist after completion of treatment period during Training season.

Variable	Source of variance	Sum of Squares	df	Mean Square	F	Sig.
MUSCULAR STRENGTH ENDURANCE	Between Groups	67.677	3	22.559	90.604	.000
	Within Groups	18.674	75	.249		
FLEXIBILITY	Between Groups	99.514	3	33.171	92.173	.000
	Within Groups	26.991	75	.360		

Table 7: Analysis of Covariance on Adjusted Post Test Means Amongypg, PEG, CYPPEG and CG on Muscular Strength Endurance and Flexibility of School Boys
** Significant at 0.05 level*

In testing the adjusted post test means among of yogic practices group (YPG), physical exercise group,(PEG), combination of yogic practices with physical exercise group (CYPPEG) and Control group(CG) on criterion variables, the obtained f-ratios are: 90.60 (Muscular strength endurance), 92.17 (Flexibility). The obtained F- ratios on the above said criterion variables among the three groups were significant at 0.05 levels since they exceed the required critical value (3.15 df 3, 75). Thus the obtained results on adjusted means statistically confirm the differences exist after completion of treatment period during Training season on criterion variables among the three different groups such as yogic practices group (YPG), physical exercise group,(PEG), combination of yogic practices with physical exercise group (CYPPEG) and Control group(CG).

3. Result

Yogic practice group improved the muscular strength endurance and flexibility of school boys. Physical exercise group improved the muscular strength endurance and flexibility of school boys.

Combination of yogic practices with physical exercise group improved the muscular strength endurance and flexibility of school boys.

Combination of yogic practices with physical exercise group improved the muscular strength endurance and flexibility better than yogic practice group, physical exercise group and control group of school boys.

4. Conclusion

Combination of yogic practices with physical exercise group improved the muscular strength endurance and flexibility better than yogic practice group, physical exercise group and control group of school boys.

5. Reference

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