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Effects of Physical Exercises and Yogic Practice on Selected Health Related Physical Fitness of Residential College Men Students

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Abstract

The purpose of the study was to find out the effects of physical exercises and yogic practice on selected health related physical fitness of residential college men students. To achieve the purpose of the present study, sixty residential college men students from Sri Kaliswari College, Sivakasi, Tamilnadu, India were selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into three equal groups of twenty each. Group I acted as Experimental Group I (Physical Exercise), Group II acted as Experimental Group II (Yogic Practice) Group III acted as Control Group. Pre test was conducted for all the subjects on selected health related physical fitness. This initial test scores formed as pre test scores of the subjects. The groups were assigned as Experimental Group I, Experimental Group II and Control Group in an equivalent manner. Experimental Group I was exposed to physical exercises, Experimental Group II was exposed to yogic practice and Control Group was not exposed to any experimental training other than their regular daily activities. The duration of experimental period was 12 weeks. After the experimental treatment, all the sixty subjects were tested on their health related physical fitness. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, Scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses. The physical exercises group showed significant difference on cardio respiratory endurance and muscular strength of residential college men students from their baseline to post training than the other groups.

Keywords: Physical Exercise, Yogic Practice, Cardio Respiratory Endurance, Muscular Strength, Residential.

Introduction

Physical exercise is any bodily activity that enhances or maintains physical fitness and overall health and wellness. It is performed for various reasons including strengthening muscles and the cardiovascular system, honing athletic skills, weight loss or maintenance, as well as for the purpose of enjoyment. Frequent and regular physical exercise boosts the immune system, and helps prevent the "diseases of affluence" such as heart disease, cardiovascular disease, Type 2 diabetes and obesity. It also improves mental health, helps prevent depression, helps to promote or maintain positive self esteem, and can even augment an individual's sex appeal or body image, which is also found to be linked with higher levels of self esteem**.** Childhood obesity is a growing global concern and physical exercise may help decrease some of the effects of childhood and adult obesity. Health care providers often call exercise the "miracle" or "wonder" drug alluding to the wide variety of proven benefits that it provides (Gilmore, 1981).

Yoga is an ancient form of relaxation and exercise that has many health benefits, including lowering cholesterol. Pranayama also helps to connect the body to its battery, the solar plexus, where tremendous potential energy is stored. When tapped through specific techniques this vital energy, or prana, is released for physical, mental and spiritual rejuvenation. Regular practice removes obstructions, which impede the flow of vital energy. When the cells work in unison, they bring back harmony and health to the system. 20 to 25 minutes (every morning or 17 evening) of pranayama practice increases lung capacity, breathing efficiency, circulation, cardiovascular efficiency, helps to normalize blood pressure, strengthens and tones the nervous system, combats anxiety and depression, improves sleep, digestion and excretory functions, provides massage to the internal organs, stimulates the glands, enhances endocrine functions, normalizes body weight, provides great conditioning for weight loss, improves skin tone and complexion. (Sugumar & Raghavan, 2010).

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Methodology

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Results

Table I. Computation of analysis of covariance of physical exercises, yogic practice and control groups on cardio respiratory endurance

	PE Group	YP Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	F-ratio
Pre-Test Means	2013.1	2014.2	2018.9	**BG**	377.23	2	188.61	0.009
				WG	1214797.35	57	21312.23	
Post-Test Means	2274.0	2149.2	2019.0	**BG**	650090.43	2	325045.21	13.14*
				WG	1409910.15	57	24735.26	
Adjusted Post-Test Means	2276.0	2150.0	2016.0	**BG**	671869.06	2	335934.53	24.83*
				WG	757516.84	56	13527.08	

An examination of table – I indicates that the results of ANCOVA for pretest scores of the physical exercises group, yogic practice group and control group. The obtained F-ratio for the pre-test is 0.009 (P>0.05) indicating that the random sampling is successful and the table F-ratio is 3.158. Hence the pre-test mean F-ratio is insignificant at 0.05 level of confidence for the degree of freedom 2 and 57. The obtained F-ratio for the post-test is 13.141 (P<0.05) and the table F-ratio is 3.158. Hence the post-test mean F-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 57. The adjusted post-test means of physical exercises group, yogic practice group and control group are 2276.0, 2150.0 and 2016.0respectively. The obtained F-ratio for the adjusted post-test means is 24.834 (P < 0.05) and the table F-ratio is 3.161. Hence the adjusted post-test mean cardio respiratory endurance F-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 56. Pre test, post test and adjusted post test mean difference of the physical exercises group, yogic practice group and control group on cardio respiratory endurance is presented in Figure I.

Figure I. Bar diagram showing the pretest, posttest and adjusted posttest mean differences of physical exercises, yogic practice and control groups on cardio respiratory endurance

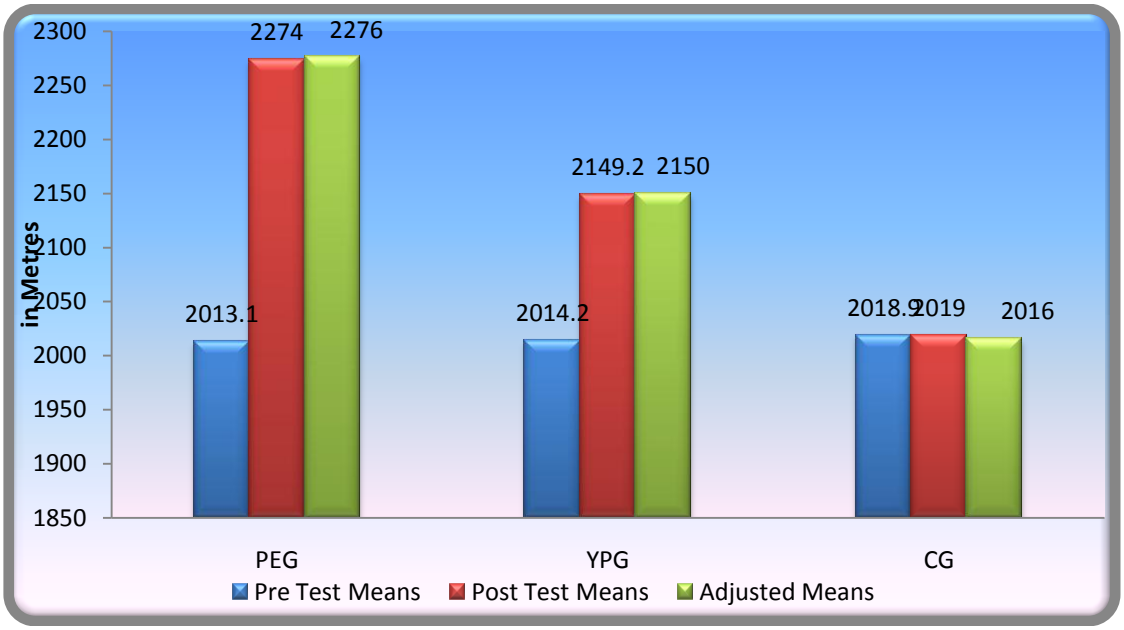

Table II. The scheffe's test for the differences between the adjusted post test paired means on cardio respiratory endurance

Physical exercises group Group (N=20)	Yogic practice Group (N=20)	Control Group (N=20)	Mean Difference	CI value
2276.0 0	2150.00	---	126.00*	92.47
2276.00	---	2016.00	260.00*	
---	2150.00	2016.00	134.00*	

*Significant

Table - II shows the ordered adjusted means and difference between the means of the physical exercises group, yogic practice group and control group. The mean values of physical exercises group, yogic practice group and control group are 2276.0, 2150.0 and 2016.0 respectively. The mean differences between physical exercises group, yogic practice group and control group are 126.00, 260.00 and 134.00 respectively. Hence there is a significant difference seen between physical exercises group and yogic practice group; physical exercises group and control group; yogic practice group and control group.

Table III. Computation of analysis of covariance of physical exercises, yogic practice and control groups on muscular strength

	PE Group	YP Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	F-ratio
Pre-Test Means	11.90	11.95	12.05	**BG**	0.23	2	0.11	0.02
				WG	247.70	57	4.34	
Post-Test Means	16.45	14.45	12.80	**BG**	133.63	2	66.81	10.84*
				WG	351.10	57	6.16	
Adjusted Post-Test Means	16.52	14.46	12.71	**BG**	145.11	2	72.55	51.34*
				WG	79.13	56	1.41	

An examination of table – III indicates that the results of ANCOVA for pretest scores of the physical exercises group, yogic practice group and control group. The obtained F-ratio for the pre-test is 0.027 (P>0.05) indicating that the random sampling is successful and the table F-ratio is 3.158. Hence the pre-test mean F-ratio is insignificant at 0.05 level of confidence for the degree of freedom 2 and 57. The obtained F-ratio for the post-test is 10.847 (P<0.05) and the table F-ratio is 3.158. Hence the post-test mean F-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 57. The adjusted post-test means of physical exercises group, yogic practice group and control group are 16.520, 14.467 and 12.713 respectively. The obtained F-ratio for the adjusted post-test means is 51.346 (P < 0.05) and the table F-ratio is 3.161. Hence the adjusted post-test mean muscular strength F-ratio is significant at 0.05 level of confidence for the degree of freedom 2 and 56. Pre test, post test and adjusted post test mean difference of the physical exercises group, yogic practice group and control group on muscular strength is presented in Figure II.

Figure II. Bar diagram showing the pretest, posttest and adjusted posttest mean differences of physical exercises, yogic practice and control groups on muscular strength

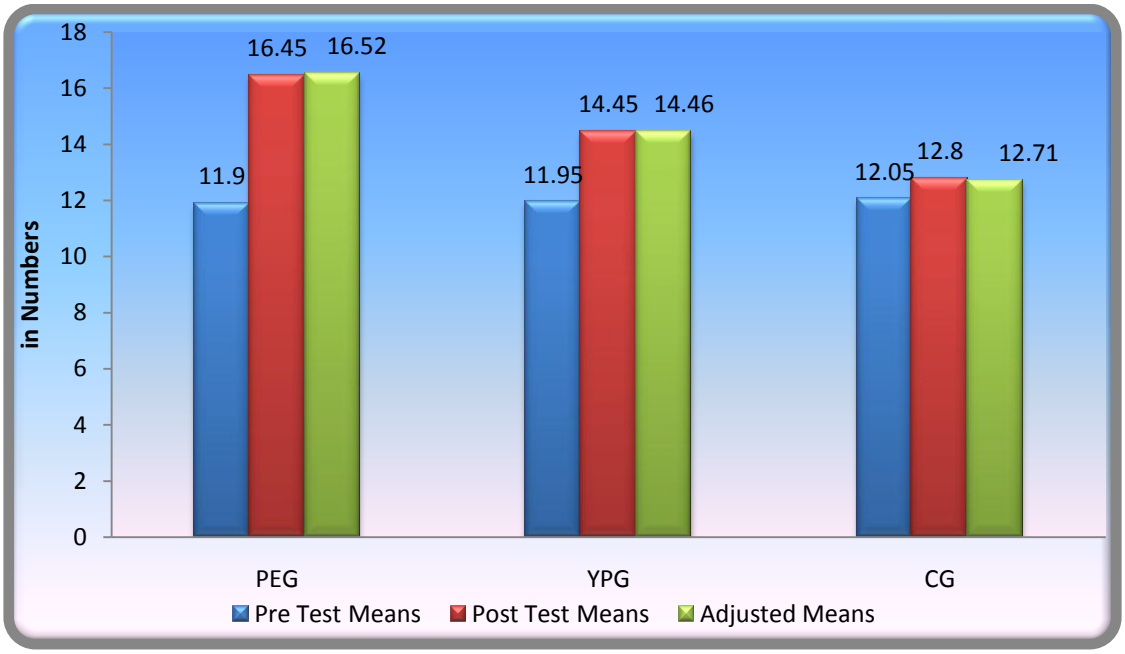

Table IV. The scheffe's test for the differences between the adjusted post test paired means on muscular strength

Physical exercises group Group (N=20)	Yogic practice Group (N=20)	Control Group (N=20)	Mean Difference	CI value
16.520	14.467	---	2.053*	0.945
16.520	---	12.713	3.807*	
---	14.467	12.713	1.754*	

*Significant

Table - IV shows the ordered adjusted means and difference between the means of the physical exercises group, yogic practice group and control group. The mean values of physical exercises group, yogic practice group and control group are 16.520, 14.467 and 12.713 respectively. The mean differences between physical exercises group, yogic practice group and control group are 2.053, 3.807 and 1.754 respectively. Hence there is a significant difference seen between physical exercises group and yogic practice group; physical exercises group and control group; yogic practice group and control group.

Conclusions

From the analysis of the data, the following conclusion was drawn:

1. The physical exercises group showed significant difference on cardio respiratory endurance and

muscular strength of residential college men students from their baseline to post training than the other groups.

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