



Comparative Effect of Aerobic Exercises and Yogic Practice on Selected Physical Variables among UG Level Students of Tumkur University

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Abstract

The purpose of the study was to find out the comparative effect of aerobic exercises and yogic practice on selected physical variables among UG level students of Tumkur University. To achieve the purpose of the present study, eighty UG level students of Tumkur University, Karnataka State, India were selected as subjects at random and their ages ranged from 18 to 21 years. The subjects were divided into four equal groups of twenty subjects each. Group I acted as Experimental Group I (Aerobic Exercises), Group II acted as Experimental Group II (Yogic Practices), Group III acted as Experimental Group III (Combined Aerobic and yogic practices) and Group IV acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. The duration of experimental period was 12 weeks. After the experimental treatment, all the eighty subjects were tested on their selected physical variables. The pre test and post test scores were subjected to statistical analysis using 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.

Keywords: Aerobic Exercises, Yogic Practices, Physical Variables, Students.

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Introduction

Aerobics is a form of physical activity that combines rhythmic aerobic exercise with stretching and strength training routines with the goal of improving all elements of fitness. It is usually performed to music and may be practiced in a group although it can be done solo and without musical equipment. With the goal of preventing illness and promoting physical fitness practitioners perform various routines comprising a number of different dance like exercise. Aerobics is a vigorous physical activity that can provide an inexpensive and practical workout for most people. Aerobic fitness helps to promote the cardio- respiratory system from disease and it promotes physical, mental, emotional and spiritual development. Aerobic program can be started at any age and the intensity of the program can also be suited to meet the larger needs of the individual.

The word "Yoga" is derived from the Sanskrit root "Yuj" which means union, joining, harnessing, contact, or connection. It is union between the individual self and the universal self. It is the fusion of a healthy body with a disciplined mind for the purpose of spiritual

development. Yoga is also blissful contact with the supreme element, higher than the highest of the known elements. It is the harnessing of one's inherent inner power, as well as the wider natural forces from which one has emerged. The aim of Patanjali Yoga is to set man free from the cage of matter. Mind is the highest form of matter and man freed from this dragnet of Chitta or Ahankara (mind or ego) becomes a pure being. The mind or Chitta is said to operate at two levels-intellectual and emotional.

Methodology

The purpose of the study was to find out the comparative effect of aerobic exercises and yogic practice on selected physical variables among UG level students of Tumkur University. To achieve the purpose of the present study, eighty UG level students of Tumkur University, Karnataka State, India were selected as subjects at random and their ages ranged from 18 to 21 years. The subjects were divided into four equal groups of twenty subjects each. Group I acted as Experimental Group I (Aerobic Exercises), Group II acted as Experimental Group II (Yogic Practices), Group III acted as Experimental Group III (Combined Aerobic and yogic practices) and Group IV acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part

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using 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.

Results

Table 1

Computation of analysis of covariance of mean of aerobic exercises, yogic practices, combined training and control groups on muscular endurance (AEG, YPG, CAEYPG & CG)

	AEG	YPG	CAEYPG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	31.45	31.20	32.50	32.20	BG	22.538	3	7.513	1.52
					WG	374.350	76	4.926	
Post-Test Means	38.65	38.20	42.15	32.60	BG	936.100	3	312.033	63.22*
					WG	375.100	76	4.936	
Adjusted Post-Test Means	38.61	38.14	42.21	32.63	BG	937.546	3	312.515	63.02*
					WG	371.911	75	4.959	

Table – 1 reveals that the indicated that the obtained 'F'-ratio for the pre-test means among the groups on muscular endurance were 31.45 for experimental group – I, 31.20 for experimental group – II, 32.50 for experimental group – III and 32.20 for control group. The obtained 'F'-ratio 1.52 was lesser than the table 'F'-ratio 2.72. Hence the pre-test mean 'F'-ratio was insignificant at 0.05 level of confidence for the degree of freedom 3 and 76. The post-test means were 38.65 for experimental group – I, 38.20 for experimental group – II, 42.15 for experimental group – III and 32.69 for control group. The obtained 'F'-ratio 63.22 was higher than the table 'F'-ratio 2.72. Hence the

post-test mean 'F'-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 76. The adjusted post-test means were 38.61 for experimental group – I, 38.14 for experimental group – II, 42.21 for experimental group – III and 32.63 for control group. The obtained 'F'-ratio 63.02 was higher than the table 'F'-ratio 2.72. Hence the adjusted post-test mean 'F'-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 75. It was concluded that there was a significant mean difference among aerobic exercises group, yogic practices group, combined training group and control group in developing muscular endurance of the UG level students.

Figure 1

Adjusted post-test differences of the aerobic exercises, yogic practices, combined training and control groups on muscular endurance (AEG, YPG, CAEYPG & CG)

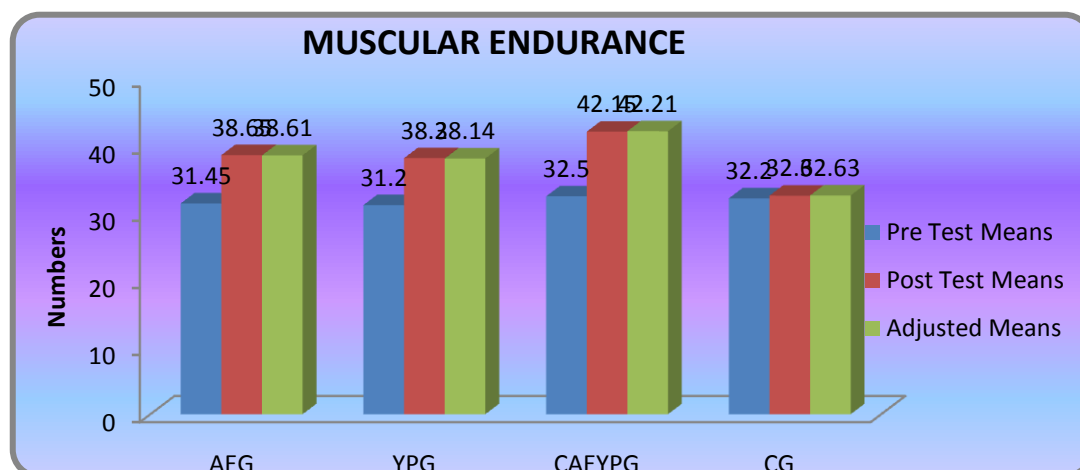


Table 2

The scheffe's test for the differences between the adjusted post-test means on muscular endurance

Adjusted Post-Test Means				Mean Difference	Confidence Interval
AEG	YPG	CAEYPG	CG		
38.61	38.14	---	---	0.47	1.64
38.61	---	42.21	---	3.60*	
38.61	---	---	32.63	5.98*	
---	38.14	42.21	---	4.07*	
---	38.14	---	32.63	5.51*	
---	---	42.21	32.63	9.58*	

* Significant at 0.05 level of confidence

The multiple comparisons showed in table 2 proved that there existed significant differences between the adjusted means of aerobic exercises and combined aerobic exercises & yogic practices group (3.60), aerobic exercises and control group (5.98), yogic practices and combined aerobic exercises & yogic practices (4.07),

yogic practices and control group (5.51), combined aerobic exercises & yogic practices and control group (9.58). There was no significant difference between aerobic exercises and yogic practices group (0.47) at 0.05 level of confidence with the confidence interval value of 1.64.

Table 3

Computation of analysis of covariance of mean of aerobic exercises, yogic practices, combined training and control groups on grip strength (AEG, YPG, CAEYPG & CG)

	AEG	YPG	CAEYPG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	46.00	46.50	45.45	45.70	BG	12.237	3	4.079	1.00
					WG	310.150	76	4.081	
Post-Test Means	51.30	51.15	53.95	46.45	BG	583.737	3	194.579	38.84*
					WG	380.650	76	5.009	
Adjusted Post-Test Means	51.28	51.02	54.04	46.49	BG	586.523	3	195.508	40.02*
					WG	366.327	75	4.884	

Table – 3 reveals that the indicated that the obtained 'F'-ratio for the pre-test means among the groups on grip strength were 46.00 for experimental group – I, 46.50 for experimental group – II, 45.45 for experimental group – III and 45.70 for control group. The obtained 'F'-ratio 1.00 was lesser than the table 'F'-ratio 2.72. Hence the pre-test mean 'F'-ratio was insignificant at 0.05 level of confidence for the degree of freedom 3 and 76. The post-test means were 51.30 for experimental group – I, 51.15 for experimental group – II, 53.95 for experimental group – III and 46.45 for control group. The obtained 'F'-ratio 38.84 was higher than the table 'F'-ratio 2.72. Hence the post-test mean

'F'-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 76. The adjusted post-test means were 51.28 for experimental group – I, 51.02 for experimental group – II, 54.04 for experimental group – III and 46.49 for control group. The obtained 'F'-ratio 40.02 was higher than the table 'F'-ratio 2.72. Hence the adjusted post-test mean 'F'-ratio was significant at 0.05 level of confidence for the degree of freedom 3 and 75. It was concluded that there was a significant mean difference among aerobic exercises group, yogic practices group, combined training group and control group in developing grip strength of the UG level students.

Figure II

Adjusted post-test differences of the aerobic exercises, yogic practices, combined training and control groups on grip strength (AEG, YPG, CAEYPG & CG)

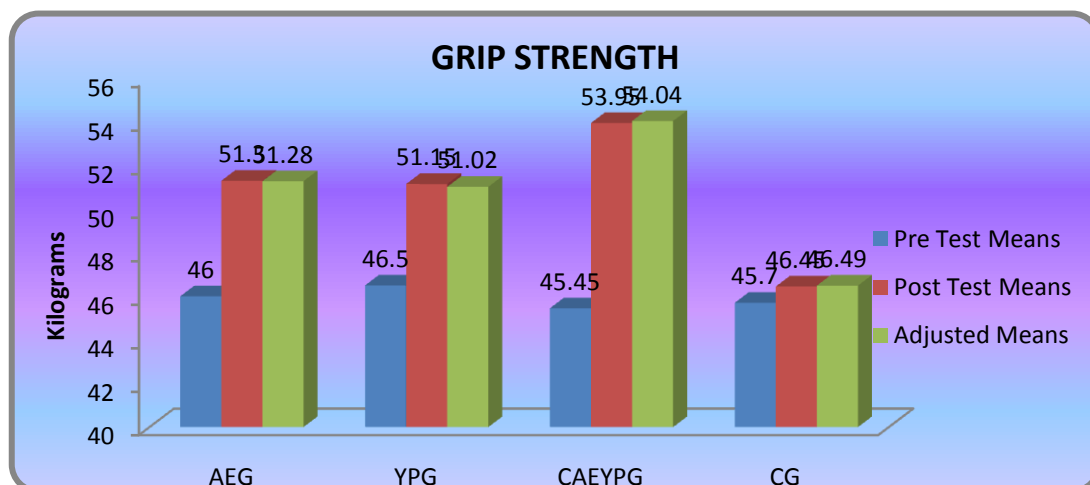


Table 4

The scheffe's test for the differences between the adjusted post-test means on grip strength

Adjusted Post-Test Means				Mean Difference	Confidence Interval
AEG	YPG	CAEYPG	CG		
51.28	51.02	---	---	0.26	1.62
51.28	---	54.04	---	2.76*	
51.28	---	---	46.49	4.79*	
---	51.02	54.04	---	3.02*	
---	51.02	---	46.49	4.53*	
---	---	54.04	46.49	7.55*	

* Significant at 0.05 level of confidence

The multiple comparisons showed in table 4 proved that that there existed significant differences between the adjusted means of aerobic exercises and combined aerobic exercises & yogic practices group (2.76), aerobic exercises and control group (4.79), yogic practices and combined aerobic exercises & yogic practices (3.02), yogic practices and control group (4.53), combined aerobic exercises & yogic practices and control group (7.55). There was no significant difference between aerobic exercises and yogic practices group (0.26) at 0.05 level of confidence with the confidence interval value of 1.62.

Results

1. The significant mean difference does not exist among all the four groups in the pre test on variables namely muscular endurance and grip strength.
2. In testing post test mean difference among the four groups statistically significant on variables of muscular endurance and grip strength.
3. In testing the post adjusted mean among the four groups also predicts the above result.

4. The combined training group showed better improvement in muscular endurance and grip strength than the other groups.

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