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## Effect of Yogasanas, aerobics and callisthenic exercises on combined study in physical fitness variables of strength

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### Abstract

The purpose of the present study was to find out the Effect of Yogasanas, Aerobics and Callisthenic Exercises on Combined Study in Physical Fitness Variables of Strength. To achieve the purpose of this study, a qualified physician examined 60 Females from Secondary School Children's. Their age ranged from 13 to 16 years, the selected subjects were divided into three Experimental groups and a control group with fifteen subjects in each Experimental Group-I Underwent Yogic Exercises (YETG), Group-II Underwent Aerobic Exercises (AETG), Group-III Underwent Callisthenic Exercises (CETG), and Group-IV served as Control Group (CG) for the training period of 12 weeks.

The data collected from the four groups before and after the Experimental period was statistically Examined to find out the significant improvement using 't' test and analysis of whenever the 'F' ratio was found to be significant, scheffe's test was used as post-test to determine which of the paired means differed significantly. In all cases, the criteria for statistical significance were set at 0.05 level of confidence ( $p < 0.05$ ).

**Keywords:** Yogasanas, aerobics and callisthenic exercises and physical fitness

### Introduction

Yogasanas are very effective in throwing out all our body wastes and bring control over the body and organs are proper functioning of which depends our health and happiness. The Asanas improve mental power and health in controlling the sense organs. It increases the elasticity of our body and makes the body more active and supple. The blood circulation takes place more smoothly and properly and the body becomes capable of more work. It improves our resistance power against diseases and do not allow any external matter to accumulate in the body, they keep the body free from diseases. The different asanas clean the blood circulation, drain of our body and circulates blood freely to all parts of our body and helps keep our body free from impurities. Yogasanas are the best means to keep organs in proper functioning order. It is not only improving body health, but also have sobering effects on the mind. The mind becomes balance and peaceful. The practice of yogasanas is very effective activating on various glands, so that they secrete their juices in the required quantity and function properly.

Aerobics exercises is the exercises that involves or improves oxygen consumption by the body. Aerobics means 'with oxygen', and refers to the use of oxygen in the body's metabolic or energy-generating process. They are several kinds of aerobics exercise which are performed at moderate levels of intensity for extended periods of time. To obtain the best results, an aerobics exercises session involves a warning up period, followed by at least 20 minutes of moderate to intense exercise, involving large muscle groups, and a cooling down period at the end.

Callisthenic training involves any exercises performed using no added weight, and is commonly referred to as body-weight training. Callisthenic training can be done as a stand-alone routine, or programmed into any weight loss, bodybuilding or fitness workout. It has many benefits and is convenient, and it can be tailored to suit beginner, intermediate or advanced trainees.

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Strength training is a type of physical exercise specializing in the use of resistance to induce muscular contraction which builds the strength, anaerobic endurance, and size of skeletal muscles. Strength training is typically associated with the production of lactate, which is a limiting factor of exercise performance. Regular endurance exercise leads to adaptations in skeletal muscle which can prevent lactate levels from rising during strength training.

**Statement of the Problem**

The Purpose of the Present Study was find out, “Effect of Yogasanas, Aerobics and Callisthenic Exercises on Combined

Study in Physical Fitness Variables of Strength”.

**Methodology**

This study deals with the procedure followed in the selection of the subjects, selection of variables, selection of tests, selection of criterion measures, reliability of instruments, reliability of data, orientation of subjects, training programme, collection of data and statistical techniques used to analyzed data. The selection of subjects 60 Females from Secondary School Children’s. Their age ranged from 13 to 16 years as per the school records.

**Table 1(a):** Summary of Mean, Standard Deviation and Mean Difference for the Pre and Post-test on Strength of Aerobics, Callisthenic, Yogasanas and Control Groups.

Group	N	Pre-test		Post-test		Mean Difference	‘t’ Value	Sig.
		Mean	Standard Deviation	Mean	Standard Deviation			
Aerobics	15	0.665	3.537	8.132	4.610	7.465	4.96*	0.000
Callisthenic	15	-1.732	3.593	5.665	3.734	-7.400	5.52*	0.000
Yogasanas	15	-1.332	5.330	5.532	5.408	-6.865	3.49*	0.002
Control	15	-1.400	6.715	1.200	6.898	-2.600	1.04*	0.304

\*Significant at 0.05 level; No Significant

**Result**

The above table-1 shows the Pre and Post-tests Mean Scores, Standard Deviation, Mean Difference, ‘t’ value and significance of Strength for the Experimental Groups and Control Group.

The obtained ‘t’ values are 4.96\*, 5.52 and 3.49 which are

greater than the table value of 2.04 (df=28) at 0.05 level and thus it is significant. It shows that Yogasanas, Aerobics and Callisthenic Exercises Groups were improved in Strength. It was concluded that Yogasanas, Aerobics and Callisthenic Exercises had significant improvement in developing Strength of school girls of non-participants in sports.

**Table 1(b):** Results of Analysis of Covariance (for adjusted scores) on Strength.

Sources of Variance	Sum of Squares	Df	Mean Scores	‘F’ Value	Sig
Treatment of Groups	251.068	3	83.022	10.77	0.000
Error	427.607	55	7.792		

\*Significant at 0.05 level confidence

(The table value required for significance at 0.05 level with df and 55 is 2.78)

**Result**

Table-1(b) shows that the obtained ‘F’ value is 10.77 which is higher than the table value 2.78 with df 3 and 55 required for significance at 0.05 level. Since the value of ‘F’ value is higher than the table value, it indicates that there is significant difference among the adjusted Post-test mean scores of Strength of Yogasanas, Aerobics and Callisthenic Exercises

Experimental Group and Control Group.

The adjusted Post-test mean scores Strength for Yogasanas, Aerobics and Callisthenic Exercises Experimental Groups and Control Group were 5.879, 6.665, 6.375 and 1.607 respectively. To find out which of the four paired means had a significant difference, the Scheffe’s Post-hoc test was applied and the results are presented in Table-3(c).

**Table 1(c):** Scheffe’s Post-Hoc test for Significant Difference in Adjusted Mean scores of Strength between Groups.

Groups				Mean Difference	Level of Significance
Control	Yogasanas	Aerobics	Callisthenic		
1.607	6.665			5.058	0.05
1.607		6.375		4.768	0.05
1.607			5.879	4.272	0.05
	6.665	6.375		0.289	NS
	6.665		5.879	0.785	NS
		6.375	5.879	0.465	NS

Scheffe’s Confidence Interval @ 0.05%=2.376; No Significant

**Results**

**Table-1(c)**

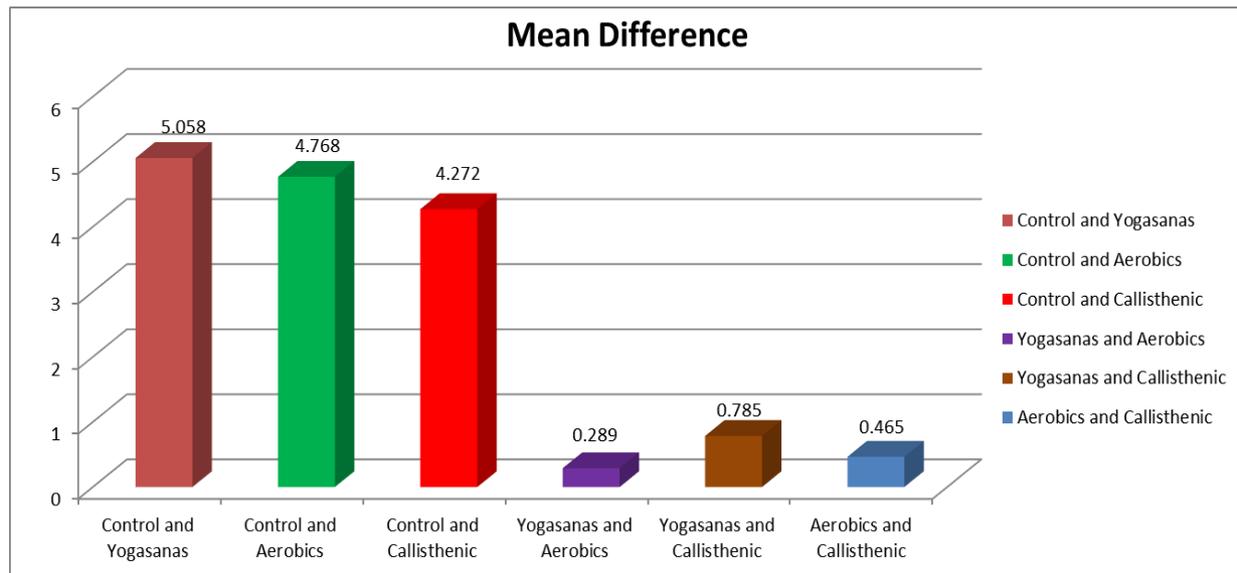
Shows that the adjusted mean difference on Strength between Control and Yogasanas Groups; Control and Aerobics Groups;; Control and Callisthenic Groups; have significant paired mean difference and the values are 5.058, 4.768 and 4.272 respectively which are greater than the confidence interval value of 2.376 at 0.05 level of confidence.

It was concluded from the results of the study that significant

difference exists in Strength between Control and Yogasanas Groups; Control and Aerobics Groups;; Control and Callisthenic Groups. It was concluded that Yogasanas, Aerobics and Callisthenic Exercises Groups improved Strength of school girls of non-participants of Sports and nosignificant mean difference exists among Experimental Groups between Yogasanas, Aerobics and Callisthenic Exercises Groups. All the training Groups are similar but from the mean differences it was observed that Yogasanas

Group in better than Aerobic and Callisthenic Exercises Group in Strength respectively. Yogasanas and Aerobics

Yogasanas and Callisthenic Aerobics and Callisthenic



**Fig 1:** Bar Graph Shows Comparison Mean Difference Scores between Groups on Strength of School Girls of non-participants.

### Discussion of Findings

The results of the study showed that there was significant improvement on selected Physical Variables such as Strength its no significant improvement on Physical variables.

### Conclusion

In the present investigation as a result of three training programmes the following improvement occurred on Physical Variables of School Girls of non-participants of sports. It was concluded from the results of the study that the Yogasana, Aerobics and Callisthenic Exercises practices Groups showed significant improvement to Strength when compared with a Control Group as well as Pre-test.

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