



## EFFECT OF AEROBIC, CALLISTHENIC AND YOGIC EXERCISES ON MENTAL HEALTH AND FLEXIBILITY OF SCHOOL BOYS OF NON-PARTICIPANTS OF SPORTS

Sreenivasa.G. M<sup>1</sup>, P. C. Krishnaswamy<sup>2</sup> and Raghupathi. K<sup>3</sup>

<sup>1</sup>Research Scholar, Nagarjuna University, Guntur, A.P.

<sup>2</sup>Professor, University College of Physical Education, Bangalore University.

<sup>3</sup>Physical Education Director, Indian Academy Pre-University College, Bangalore.

**Abstract:-** The purpose of study was to determine the effect of aerobic, callisthenic and yogic exercises on selected psycho-physical variables. To achieve the purpose of the study, Sixty (60) IX standard school boys of non-participants of sports and studying in Government Schools of Solur, Narasapura, and Mudavadi, Tumkur District, Karnataka were selected as subjects randomly. Their age ranged from 13 to 15 years. The study was confined to the mental health and flexibility variables. The Mental Health Status Scale developed by Abraham and Prasanna (1981) was used to assess the mental health of subjects and flexibility was tested with sit and reach test and recorded in. To find out the variance in the selected criterion variables due to the application of independent variable (treatment), Analysis of Covariance (ANCOVA) was applied and the level of significance was set at the 0.05 and 0.01 levels on each criterion variable. The result indicated that experimental groups (Aerobic, Callisthenic and Yogic exercises groups) were significantly improved the Mental Health and Flexibility when compared with the control group. It was also indicated that yoga group had significantly improved the mental health and flexibility greater than aerobic and callisthenic exercises training groups respectively. The study suggested that the results would provide a scientific base and guidance to the coaches and physical educationists to design the training program for school boys of non-participants of sports.

**Keywords:** Aerobic, Callisthenic, Yogic, psycho-physical, non-participants of sports.

### INTRODUCTION

Physical Education and Sports aims to keep people in good physical shape. The physical education programs provide students with accurate and significant knowledge related to their individual needs, interest and also concern for healthy physical and psychological environment. Twenty first century has witnessed a sign development in science and technology. Due to scientific technological invention, the movements of the human being have been restricted and increased anxiety and tension and facing feel prey of stress and mental diseases. Hence it is the task of everybody concerned to see that our future citizens are strong, healthy and have an ultimate personality. So it is important to give importance to any physical activities such as aerobic, callisthenic and yogic exercises.

As children grow older their lives become more sedentary and they watch TV or play computer games. "Computers may have become a necessity for today's kids, but a study says that the Machines are producing a generation of weaklings." (Deccan Herald May 24, 2011). Physical activities stimulate growth and leads to improved physical, mental and emotional health. Schools are dynamic settings for promoting health and wellness through various correlated areas such as physical education and sports. There is a growing awareness that the health and wellbeing of young children is of paramount importance and schools can provide a strategic means of improving children's health, life skills and behaviour. Pour Soltani (2007) recorded that there are significant differences in the mental health between disabled athletes and disabled non-athletes.

Activities that encourage bending, stretching and reaching promote flexibility. Having adequate flexibility allows children to participate in daily activities without pain or restriction from their muscles or joints. Flexibility can help body stay flexible and limber, which gives more freedom of movement for everyday activities. Improving flexibility through exercise reduces the chance of injury and improves balance and coordination.

Aerobic exercise is a non-specific activity that improves physical capacities. It is simple to carry out and includes jogging in place, knee ups, short kick, running, marching and so on. (Gody et al. 2006). Callisthenic exercises is a form of exercise consisting of a variety of sample, often rhythmical, movement intend to increase body strength and flexibility with movements such as bending, jumping, swinging, twisting, kicking, using body weight for resistance. Calisthenics when performed vigorously and with variety can benefit both muscular and cardiovascular fitness (Rajeev Srivastava, 2013). Yoga helps the children in developing fitness. Academic pressure is another main cause. Parents and teachers are neglecting the physical objectives of their children. Many scientists, doctors, psycholinguists etc., all over the world are extensively studying the beneficial aspects of yoga which encourages us to attain positive health through yoga. Secondary School education is a very important stage of growth and development of an individual. Considering the fact that exercises may play an important role in the health of body and soul, strongly favored for the young students and as a strategy, it can be used to develop their mental health, therefore the research on effect of varied exercises on mental health and health related fitness in flexibility is a priority, so perhaps it would help to promote their mental health.

### **Statement of the Problem**

The purpose of the study was to find out the effect of aerobic, callisthenic and yogic exercises on Mental Health and Flexibility variables of school boys of non-participants of sports.

### **Objective of the Study**

The objective of this study was to determine the effect of aerobic, callisthenic and yogic exercises on Mental Health and flexibility variables of school boys of non-participants of sports.

### **Statement of Hypothesis**

It was hypothesized that 12 weeks of aerobic, callisthenic and yogic exercises training will have significant improvement on Mental Health and Flexibility variables of school boys of non-participants of sports.

### **METHODOLOGY**

The subjects (n=60) were randomly assigned to four equal groups of 15 school boys of non-participants in sports and their age between 13-15 years. The groups were assigned as Experimental Groups I, II, III and control group. Pre test (initial) scores were conducted for all the subjects on Mental Health variable collected by administering Mental Health Scale developed by Abraham and Prasanna (1981) and Flexibility variables by testing sit and reach test. The experimental Group-I participated in aerobic exercises, Group-II participated in callisthenic exercises and Group-III participated in yogic exercises done for a period of 12 weeks. The post test (final) scores were conducted on the above said criterion variables after experimental period. The differences between initial and final mean scores on selected variables were considered as the effect of experimental treatments. Analysis of Covariance (ANCOVA) was used to determine the significance of the means for each variable. Post hoc analysis was made using LSD test when obtained F value was significant. In all cases 0.05 level and 0.01 levels was fixed to test the hypothesis.

### **RESULTS AND DISCUSSION**

Analysis of the treatment effects, namely Aerobic Exercises Training Group (AETG), Callisthenic Exercises Training Group (CETG), Yogic Exercises Training Group (YETG) and Control Group (CG) on selected criterion variables were presented in Table-1 to Table-4

**Table-1: Analysis of Covariance on Mental Health among AETG, CETG, YETG and CG.**

Mean	CG	AETG	CETG	YETG	Sources of Variance	Sum of Squares	df	Mean Squares	Obtained F value
Pre Test	75.066	75.266	75.400	75.133	Between	0.983	3	0.328	0.003 <sup>NS</sup> (1.000)
					Within	5379.200	56	96.057	
Post Test	74.600	86.133	85.600	87.466	Between	1594.183	3	531.394	6.142* (0.001)
					Within	4844.667	56	86.512	
Adjusted Post Test	74.688	86.104	85.492	87.516	Between	1567.563	3	522.521	9.645* (0.000)
					Within	2979.705	55	54.176	
Mean Diff	-0.466	10.867	10.200	12.333					

<sup>NS</sup> Not Significant; \*\*Significant at 0.01 level F (df) 3,56 is 4.20)

Since significant F ratio was obtained, the results were further subjected to post hoc analysis using LSD test and results presented in Table-2.

**Table-2: LSD Confidence Interval (CI) Test scores on Mental Health**

Groups				Mean Difference	Required C.I.
CG	AETG	CETG	YETG		
74.688	86.104			11.416*	5.402
74.688		85.492		10.804*	
74.688			87.516	12.827*	
	86.104	85.492		0.612	
	86.104		87.516	1.412	
		85.492	87.516	2.024	

The results of this study proved that Mental Health of the school boys was significantly improved due to 12 weeks of AETG, CETG and YETG as the obtained F value of 9.645 on adjusted means was greater than the required table F value of 4.20 at 0.01 level. The post hoc analysis proved that there was significant difference between AETG and CG; CETG and CG and YETG and CG. The treatment groups were proved statistically by improving mental health of school boys and the comparison between the treatment groups proved by mean scores that YETG was better than AETG and CETG respectively in improving mental health of school boys. Hence the stated hypothesis was accepted for the above said criterion variable.

**Table-3: Analysis of Covariance on Flexibility among AETG, CETG, YETG and CG**

Mean	CG	AETG	CETG	YETG	Sources of Variance	Sum of Squares	df	Mean Squares	Obtained F value
Pre Test	1.400	1.400	1.533	1.466	Between	0.183	3	0.061	0.006 <sup>NS</sup> (0.999)
					Within	528.667	56	9.440	
Post Test	1.800	4.733	4.600	7.733	Between	264.317	3	88.106	12.721** (0.000)
					Within	387.867	56	6.926	
Adjusted Post Test	1.832	4.766	4.546	7.723	Between	260.780	3	86.927	28.664** (0.000)
					Within	166.796	55	3.033	
Mean Diff	0.400	3.333	3.067	6.267					

<sup>NS</sup>Not Significant; <sup>\*\*</sup>Significant at 0.01 level F (df) 3,56 is 4.20)

Since significant F ratio was obtained, the results were further subjected to post hoc analysis using LSD test and results presented in Table-4.

**Table-4: LSD Confidence Interval (CI) Test scores on Flexibility**

Groups				Mean Difference	Required C.I.
CG	AETG	CETG	YETG		
1.832	4.766			2.933*	1.278
1.832		4.546		2.714*	
1.832			7.723	5.890*	
	4.766	4.546		0.220	
	4.766		7.723	2.957*	
		4.546	7.723	3.176*	

Fig.1: Bar diagram shows comparison of adjusted mean scores of Mental Health among groups

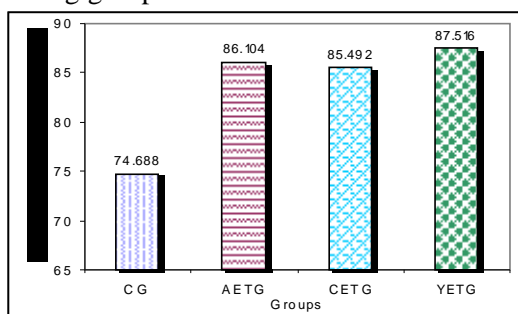
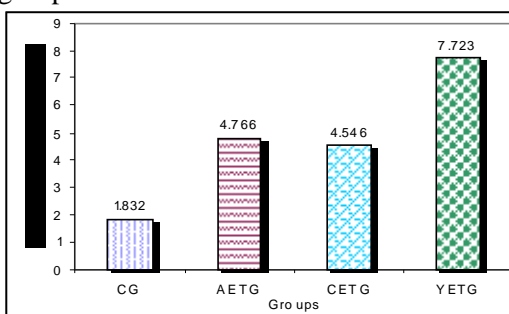


Fig.2: Bar diagram shows comparison of adjusted mean scores of Flexibility among groups



The results of this study proved that Flexibility of the school boys was significantly improved due to 12 weeks of AETG, CETG and YETG as the obtained F value of 28.664 on adjusted means was greater than the required table F value of 4.20 at 0.01 level. The post hoc analysis proved that there was significant difference between AETG and CG; CETG and CG and YETG and CG. The treatment groups were proved statistically by improving flexibility of school boys and the comparison between the treatment groups proved statistically that YETG was better than AETG in improving flexibility of school boys and Aerobic and Callisthenic exercise groups had improved similar type of flexibility. Hence the stated hypothesis was accepted for the above said criterion variable.

**CONCLUSION**

It was concluded that varied exercises groups significantly improved mental health and flexibility of school boys of non-participants of sports. The results suggested that physical exercises such aerobic, callisthenic and yogic exercises as an appropriate, easy and affordable approach for increasing mental health among students seems to be more necessary and also improve the flexibility. The present study would provide a scientific base and guidance to the coaches, sports scientists and physical educationists to design the training program for school boys of non-participants of sports.

**REFEERNCES**

- 1.De Gody DV, Bringhenti RL, Severa A, de Gaspary R, Poly LV. Yoga versus aerobic activity: effect on spirometry results and maximal inspiratory pressure. *J Bras Pneumol.* 2006;32(2):130-135.
- 2.Deccan Herald May 24, 2011
- 3.Rajeev Srivastava, Effect of Pilates Exercise Calisthenics Exercise and Combination of Pliates and Calisthenics Exercise on Flexibility and Strength of School Boys, *IJMESS*, October, 2013 Vol.2 (2): 75-77
- 4.Volga Hovsepian A Comparison between Yoga and Aerobic Training Effects on Pulmonary Function Tests and

Physical Fitness Parameters Pak J Med Sci (2013), Vol.29(1): 317-320.

5. Pour Soltani Zarandi, H., 2007. Comparison of the general health of veterans and Physically Handicapped athletes and non-athletes. In Faculty of Physical Education and Sports Science. Tehran: Tarbiat Moalem University.

6. Yaghoubi, N., 1996. Epidemiology of psychiatric disorders in urban and rural areas Some'esara city. In Clinical Psychology: Iran University of Medical Sciences and Health Services.