



Effect of callisthenic exercises with and without core training on selected health related physical fitness variables among overweight non-coastal area school boys

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Abstract

The absence of information about health related physical fitness of young boys, The present investigation was to find out the effect of callisthenic exercises with and without core training on selected health related physical fitness variables among overweight non-coastal area school boys. To achieve the purpose of the study 400 school boys were selected from Chennai non-coastal area and they were screened by BMI testing tool. After the screening 75 overweight school boys were randomly selected as a subject. Their age ranges from 14 to 16 years. They were divided into three equal groups consist of 25 subjects. Group - I underwent Callisthenic Exercises Training with Core Training (CETWCT), and Group – II underwent Callisthenic Exercises Training without Core Training (CETWOCT) and Group – III Control group (CG) did not exposed to any training. The experimental training Period limited with 5 days in a week of 6 weeks. The selected criterion variables such as cardiovascular endurance, strength and flexibility were measured by 12min Coopers test, Bend Knee Sit-ups and Sit and Reach test. The collected data were analyzed statistically by Analysis of Covariance (ANCOVA) and whenever the ‘F’ ratio for the adjusted test was found to be significant Scheffe’s Post hoc test will be used. In all cases, 0.05 level of significance was fixed. The results of the study proved that selected criterion variables were significantly improved due to callisthenic exercise with and without core training, and also it proved that callisthenic exercise with core training (CETWCT) was better than the callisthenic exercise without core training (CETWOCT) among overweight coastal area school boys.

Keywords: overweight, costal area, school boys, cardiovascular endurance, abdominal strength and flexibility

Introduction

During the human life span, many factors contribute to changes in both fitness levels and sports activities, but regular physical activity from childhood to adulthood also is an important determinant of adult fitness level. Participation in physical activity during childhood can aid the development of motor abilities, and lay the foundation for good health, especially cardiovascular health. However, studies have shown that the physical activity levels of children, in general, are not sufficient to promote optimal health.

Health is a condition or quality of human organism expressing the adequate functioning of the organism in given conditions of genetics and environment. Good health is a state of complete physical, mental and social well-being and not merely an absence or infirmity, but the attainment of a level of health that will enable every individual to lead a socially and economically productive life (The World Health Organization, 2008). In the modern life style, children are not exposed to playing in outdoor games. Most of them are playing games in indoor mobile/video games. They get enough food but they are lacking to physical activity which increases their weight in urban areas. They are our next generation youngster. The investigator found this problem need to be answered. Through this experimental training, current generation children will get a healthy lifestyle.

Bodyweight plays a vital role in maintaining and living a healthy life. Health depends on one’s body weight. Bodyweight increased by the intake of food loading and lack of physical activity is the main reason for overweight and obesity. Human body weight refers to a person’s mass or weight. The weight that is higher than what is considered as a healthy weight for a given height is described as overweight. Body mass index or BMI is used as a screening tool for overweight. Overweight defined as abnormal or excessive fat accumulation that may impair health. BMI is a simple indeed of weight-for-height that is commonly used to classify overweight (Standard and Margalin, 1990).

Methodology

To achieve the purpose of the study 400 school boys were selected from Chennai non-coastal area and they were screened by BMI testing tool. After the screening 75 overweight school boys were randomly selected as a

subject. Their age ranges from 14 to 16 years. They were divided into three equal groups consist of 25 subjects. Group - I underwent Callisthenic Exercises Training with Core Training (CETWCT), and Group – II underwent Callisthenic Exercises Training without Core Training (CETWOCT) and Group – III Control group (CG) did not exposed to any training. The experimental training Period limited with 5 days in a week of 6 weeks. The selected criterion variables such as cardiovascular endurance, strength and flexibility were measured by 12min Coopers test, Bend Knee Sit-ups and Sit and Reach test.

Statistical Techniques

The collected data were analyzed statistically by Analysis of Covariance (ANCOVA) and whenever the ‘F’ ratio for the adjusted test was found to be significant Scheffe’s Post hoc test will be used. In all cases, 0.05 level of significance was fixed.

Result and Discussion

The data collected prior and after the experimental period on selected health related physical fitness variables of Callisthenic exercises with and without core training and control groups were analyzed and presented in below tables.

Result on Cardiovascularendurance

Table 1: Computation of Analysis of Covariance On Cardiovascular Endurance of Experimental Groups And Control Group (Score in Meters)

Test	CEWCT	CEWOCT	CG	Source of variance	Sum of Squares	df	Mean square	F
Pre-test mean	769.00	767.56	759.40	Between	233.28	2	111.64	1.39
				Within	5999.2	72	83.32	
Post-test mean	773.36	769.04	760.88	Between	915.94	2	457.97	4.63*
				Within	6104.72	72	84.78	
Adjusted mean	771.28	769.04	766.88	Between	232.59	2	116.29	15.51*
				Within	532.13	71	7.49	

*Significant at 0.05 level of confidence for 2 and 72(df) =3.12, 2 and 71 (df) = 3.13

Table 2: Scheffe’s Post Hoc Test for The Differences among Paried Meansof Experimentals and Control Group on Cardiovascular Endurance (Score In Meters)

CEWCT	CEWOCT	CG	Mean difference	Confidential interval
771.28	769.04		2.24*	1.94
771.28		766.88	4.40*	
	769.04	766.88	2.16*	

*significant level at 0.05 level.

Result On Strength

Table 3: Computation of analysis of covariance on strength of experimental groups and control group (Score in counts)

Test	CEWCT	CEWOCT	CG	Source of variance	Sum of Squares	df	Mean square	F
Pre-test mean	6.84	6.96	7.12	Between	0.98	2	0.49	1.07
				Within	32.29	72	0.45	
Post-test mean	7.56	7.24	6.96	Between	4.50	2	2.25	6.85*
				Within	23.68	72	0.32	
Adjusted mean	7.62	7.25	6.89	Between	6.51	2	3.25	14.19*
				Within	16.29	71	0.22	

*Significant at 0.05 level of confidence for 2 and 72(df) =3.12, 2 and 71 (df) = 3.13

Table 4: Scheffe’s Post Hoc Test for The Differences among Paried Meansof Experimentnal and Control Groups on Abdominal Strength (Score in Meters)

CEWCT	CE	CG	Mean difference	Confidential interval
7.62	7.25		0.37*	0.31
7.62		6.89	0.73*	
	7.25	6.89	0.36*	

*significant level at 0.05 level.

Result on flexibility

Table 5: Computation of Analysis of Covariance on Flexibility of Experimental Group and Control Groups (Score In Centimeter)

Test	CEWCT	CEWOCT	CG	Source of variance	Sum of Squares	df	Mean square	F
Pre-test mean	20.26	20.43	20.24	Between	0.55	2	0.27	1.13
				Within	17.49	72	0.24	
Post-test mean	20.96	20.63	20.46	Between	3.28	2	1.64	6.17*
				Within	19.13	72	0.26	
Adjusted mean	20.84	20.69	20.52	Between	1.31	2	3.65	21.08*
				Within	2.20	71	0.03	

*Significant at 0.05 level of confidence for 2 and 72 (df) =3.12, 2 and 71 (df) = 3.13

Table 6: Scheffe's Post Hoc Test for The Differences Among Paired Means of Experimental and Control Groups on Flexibility (Score In Centimeters)

CEWCT	CEWOCT	CG	Mean difference	Confidential interval
20.84	20.69		0.15*	0.12
20.84		20.52	0.33*	
	20.69	20.52	0.18*	

*significant level at 0.05 level.

Discussion on Findings

Following that the collection of data, proper statistical analysis has been done to present the discussion on findings. The researcher examined the practical investigation of callisthenic exercises with and without core training on selected health related physical fitness variables of non-coastal school boys. The outcomes of the research indicated that the experimental groups had significantly improved in the selected health related physical fitness namely cardiovascular endurance, strength and flexibility after six weeks of training program. Further it was found that the higher significant improvement among callisthenic exercise group with core training participants on dependent variables namely cardiovascular endurance, strength and flexibility, compared to callisthenic exercises without core training group. Young, W. B. (2006)^[4] found Hypertrophy and general power exercises can enhance sports performance. Pedersen, et.al. (2017)^[2] proved that the team sports and resistance training improved physical function, psychological well-being, and quality of life. These findings suggested that callisthenic with and without core training over 6 weeks were able to promote noteworthy improvement on selected health related physical fitness variables among non-coastal overweight school boys.

Conclusion

1. It was concluded that there was a significant improvement on selected health related physical fitness variables namely cardiovascular endurance, strength and flexibility due to callisthenic exercises without core training (CEWOCT) among overweight non-coastal area school boys.
2. It was concluded that there was a significant improvement on selected health related physical fitness variables namely cardiovascular endurance, strength and flexibility due to callisthenic exercises with core training (CEWCT) among overweight non-coastal area school boys.
3. It was concluded that callisthenic exercises with core training (CEWCT) group were better significant difference on selected health related physical fitness variables namely cardiovascular endurance, abdominal strength, and flexibility compare with callisthenic exercises without core training (CEWCT).

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