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Effect of physical activities programmes on muscular strength muscular endurance agility among tribal school boys of Kurnool district of Andhra Pradesh

P Lakshman Naik and Dr. PK Subramaniam

Abstract

The Purpose of the study was to find out the Effect of Physical Activities Programmes on Muscular Strength Muscular Endurance Agility among Tribal School Boys of Kurnool District of Andhra Pradesh. To achieve the purpose of the study sixty Tribal school boys were selected as subjects at random from ST Ashram High School, Alur, Kurnool District (A.P.). Their age ranged from 13 to 15 years. The subjects were divided into two equal groups namely experimental group and control group each group consist of 30 subjects. Experimental group underwent Physical Activities programmes for the period of twelve weeks. Whereas Control group did not participate any specific physical activities programme other than their regular activities programme as per their school curriculum. The data were collected before and after the experimental period on Muscular Strength, Muscular Endurance and Agility. The obtained data from experimental group and control group were statistically analyzed with analysis of covariance (Ancova). The result of the study revealed that the experimental group had achieved a significant improvement on Muscular Strength, Muscular Endurance, and Agility, when compared to the control group.

Keywords: Physical activities, muscular strength, muscular endurance, agility

Introduction

Over a span of seventy years of independence tribals of our country are yet to achieve significant development in the fields of Physical Education, health and wellness. Many of them, even today are struggling for their existence in remote tribal areas which are far away from the district headquarters of the tribal dominated districts. Tribal children do not find schools, and play field teaching as interesting and meaningful. They continue to suffer from utter poverty; their dreams and aspirations are very limited. It has been felt that through physical education we can empower them, generate awareness in them for a better living with minimum facilities for human life. In spite of various governmental programmes that have been introduced as interventions for promoting physical education and sports among the tribals, they are only peripherally touched by the Physical education system. It is true that a tribal child is a child of nature traditionally. To win them away from the totems and taboos that circumscribe them and to bring them into the main stream of national life is a delicate task and needs careful and sympathetic handling.

Kurnool district is a drought prone area. That reflects in poverty. The standard of Physical education is also low according to the data. Hardly permanent teachers are found in the schools. Schools playground facilities and appointment of physical education teachers are scarcely attended. Since physical fitness is vital for the wellbeing of the individuals, physical education activities are essential in the school curriculum.

Physical fitness is an important outcome of physical education and it is physical education in the school system that is most capable of bringing it out. The physical fitness over a long span and examination of the same reflect the status of health. Physical examination assesses the growth pattern and functional efficiency of sensory and motor organs, functional efficiency of the body in terms of strength, cardio respiratory endurance, flexibility, speed, agility, balance and neuromuscular co-ordination. Physical fitness is a combination of qualities that enable a person to perform well in vigorous physical activities.

These qualities include agility, endurance, flexibility and strength. Physical fitness and good health are not the same, though each influences the other. (Gothell, 1979) ^[1].

The benefits of physical fitness are numerous. The person who is physically fit has greater amount of strength, energy and stamina an improved sense of well being better protection from injury because strong well developed muscles safeguard bones, internal organs and joints and keep moving parts limbers and improved cardio respiratory function. (Bucher and Prentice 1985) ^[2].

Physical activity is essential for the development of wholesome personality of a child which would depend upon the opportunities provided for wholesome development of the physical, mental, emotional, social and spiritual aspects. Hence a well organized and properly administered physical education programme for school children is very essential.

Proper growth and maintenance of good health, participation in daily physical activities is an indispensable one. The high level of physical fitness comes from years of daily experience in a selected variety of vigorous physical activities. It is a biological principle that function builds structure and structure decides function. Man needs vigorous exercises for growth and development. To perform the daily activities in a more efficient manner, a condition of muscles, their strength and endurance are essential to man. A muscle must be overloaded in order to be strengthened (Govindarajulu, 1991) ^[3]

An active lifestyle enhances the quality of life. An increase in total physical activity at low to moderate intensities is associated with a decrease in the risk of heart disease. Regular vigorous physical activity increases cardio-respiratory fitness (Feiring Williams 2000) ^[4].

Statement of the Problem

The purpose of the study was to find out the effect of physical activities programmes on Muscular Strength, Muscular

Endurance and Agility among tribal school boys of Kurnool district of Andhra Pradesh.

Hypothesis

It was hypothesized that there would be a significant improvement on Muscular Strength, Muscular Endurance and Agility due to the influence of physical activities programme.

Methodology

The Purpose of the study was to find out the Effect of Physical Activities Programmes on Muscular Strength Muscular Endurance Agility among Tribal School Boys of Kurnool District of Andhra Pradesh. To achieve the purpose of the study, sixty Tribal school boys were selected as subjects at random from ST Ashram High School, Alur, Kurnool District (A.P.). Their age ranged from 13 to 15 years. The subjects were divided into two equal groups namely experimental group and control group, each group consist of 30 subjects. Experimental group underwent Physical Activities programmes (Calisthenics Exercises, Dumb-bell Exercises, Running Forward Relay, Hoop Exercises, Flowers stick Exercises, Dands and Baithaks, Lezium Exercises, Yoga Exercises, Pole Drill Exercises, Indian Club Exercises, Pyramids, Gymnastics Floor Exercise, Combative, Wand Exercises) for the period of twelve weeks. Whereas Control group did not participate any specific physical activities programme other than their regular activities programme as per their school curriculum. The data were collected before and after the experimental period on Muscular Strength (Pull ups), Muscular endurance (Bent Knee Sit Ups), and Agility (Shuttle Run). The obtained data from experimental and control group were statistically analyzed with analysis of covariance (Ancova).

Results and discussion

Table 1: Analysis of Covariance on Muscular Strength (Pull-Ups) of Scores of Experimental Group and Control Group.

Tests	Physical Activities Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	'F' Ratio	P-Values
Pre test Mean	5.80	5.97	Between	0.42	1	0.42	0.08	0.7783
SD	2.29	2.11	Within	289.77	58	5.00		
Post test Mean	8.50	7.00	Between	33.75	1	33.75	6.76*	0.0118
SD	2.20	2.19	Within	289.50	58	4.99		
Adjusted Post Test Mean	8.58	6.92	Between	40.90	1	40.90	49.44*	0.0000
			Within	47.15	57	0.83		

*Significant at 0.05 levels.

(Table value required for significance at 0.05 levels with df 1 & 58 and 1 & 57 are 4.01).

It was observed from the table-I that there is no significant difference in pre test ($F = 0.08 < 4.01$) at 0.05 level of confidence. It was also observed that the Physical Activity Programme effects are clearly evident in post test ($F =$

$6.76 > 4.01$) and also in Adjusted post test ($F = 49.44 > 4.01$) were significant at 0.05 level respectively. It clearly indicated that the experimental group showed significant improvement on Muscular Strength than the control group.

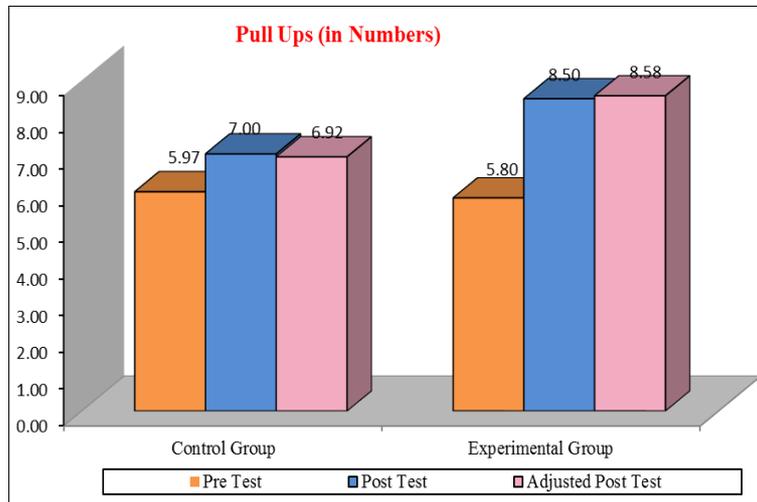


Fig 1: Mean Score of Pre Test, Post Test and Adjusted Post Test of Experimental Group and Control group on Muscular Strength.

Table 2: Analysis of Covariance on Muscular Endurance (Bent Knee Sit Ups) of Scores of Experimental Group and Control Group.

Tests	Physical Activities Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	'F' Ratio	P-Values
Pre test Mean	21.37	21.33	Between	0.017	1	0.017	0.0063	0.9370
SD	5.10	5.00	Within	1529.63	58	26.37		
Post test Mean	25.43	23.00	Between	88.82	1	88.82	4.02*	0.0496
SD	4.53	4.71	Within	1281.37	58	22.09		
Adjusted Post Test Mean	25.42	23.01	Between	86.67	1	86.67	59.94**	0.0000
			Within	82.42	57	1.45		

*Significant at 0.05 levels.

(Table value required for significance at 0.05 levels with df 1 & 58 and 1 & 57 are 4.01).

It was observed from the table –II that there is no significant difference in pre test ($F = 0.0063 < 4.01$) at 0.05 level of confidence. It was also observed that the Physical Activity Programme effects are clearly evident in post test ($F =$

$4.02 > 4.01$) and also in Adjusted post test ($F = 59.94 > 4.01$) were significant at 0.05 level respectively. It clearly indicated that the experimental group showed significant improvement on Muscular Endurance than the control group.

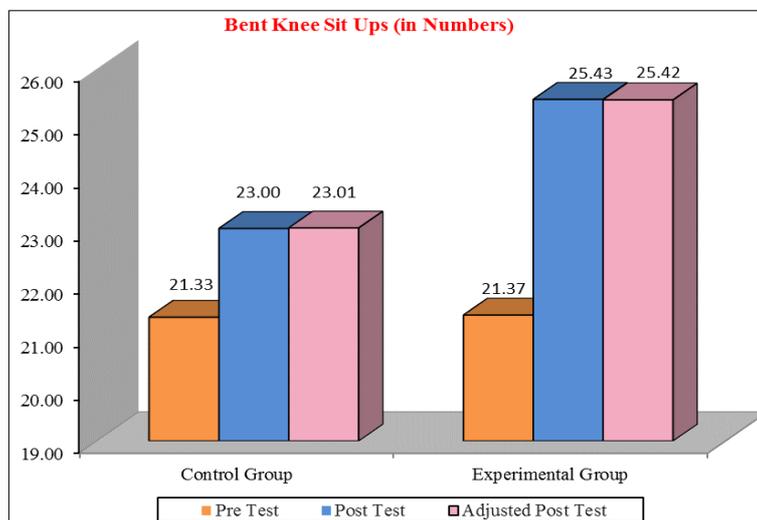


Fig 2: Mean Score of Pre Test, Post Test and Adjusted Post Test of Experimental Group and Control Group on Muscular Endurance.

Table 3: Analysis of Covariance on Agility (Shuttle Run) of Scores of Experimental Group and Control Group.

Tests	Physical Activities Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	'F' Ratio	P-Values
Pre test Mean	11.63	11.84	Between	0.68	1	0.68	2.73	0.1039
SD	0.60	0.35	Within	14.54	58	0.25		
Post test Mean	9.30	10.99	Between	43.28	1	43.28	77.96*	0.0000
SD	0.90	0.52	Within	32.20	58	0.56		
Adjusted Post Test Mean	9.37	10.92	Between	34.28	1	34.28	78.58*	0.0000
			Within	24.86	57	0.44		

*Significant at 0.05 levels.

(Table value required for significance at 0.05 levels with df 1 & 58 and 1 & 57 are 4.01).

It was observed from the table – III that there is no significant difference in pre test ($F = 2.73 < 4.01$) at 0.05 level of confidence. It was also observed that the Physical Activity Programme effects are clearly evident in post test ($F =$

$77.96 > 4.01$) and also in Adjusted post test ($F = 78.58 > 4.01$) were significant at 0.05 level respectively. It clearly indicated that the experimental group showed significant improvement on Agility than the control group.

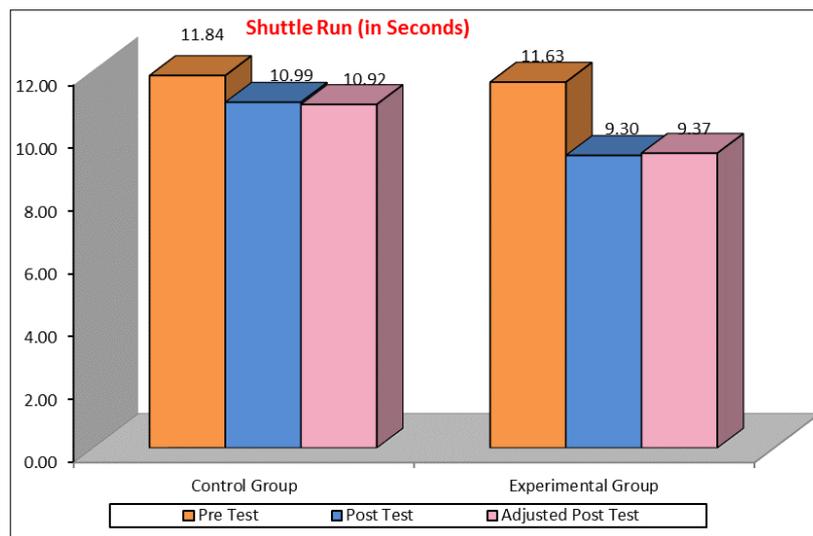


Fig 3: Mean Score of Pre Test, Post Test and Adjusted Post Test of Experimental Group and Control Group on Agility.

Conclusion

The result of the study revealed that there was significant improvement on Muscular Strength, Muscular endurance and Agility due to the influence of Physical Activities Programmes, when compared to the Control Group.

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