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Survey and impact of physical activities training on body composition and flexibility of tribal schools boys of Villupuram district-Tamil Nadu

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Abstract

To survey the collection of data this study total (N= 960 boys) selected subjects from villupuram District tribal schools. The subjects age ranged between 12 to 15 years. The subjects from the following schools ekalvaa Model Hr. Sec. Residential School (School - I), Villimalai, Danis Mission Hr. Sec. School, Kariyalur (School - II), Govt, Tribal Residential School, Kattaputtur (School - III), Govt. Tribal Residential School, Innadu (School - IV), Govt, Tribal Residential School, Maniyarpalayam (School - V), D.M.P.B. Good Shepherd Hr. Sec. School, Melnelavu (School -VI), Nallameiyappan Hr. Sec. School, Serapattu (School - VII), Intake Metriculation School, Vellimalai (School - VIII). The selected criterion variables body composition assessed with slim glide caplier and flexibility tested with sit and reach test. The collected data were treated with one way ANOVA and hull scale for percentiles. The level of significant fixed at 0.05. The results shows that minimum requirement not attain fitness levels of the tribal school children. Further remedial measures taken 120 subjects were selected. The subjects divided into two equal group. The group-I consist of sixty subjects experimental group they undergone to physical exercises with yogaasanas training up to 12 weeks. The group-II acted as control group. The data were assessed dependent 't' test and analysis of covariance. The level of significant was fixed 0.05. The results of the shows that significant reduction of body composition variables and improvement of flexibility of experimental group. There no significant changes in control group of body composition and flexibility on tribal school children. Further necessary need for curriculum development to include physical exercise programme for the betterment of healthy society of Tamil Nadu.

Keywords: body composition, flexibility and physical exercises training with yoga and tribal schools

Introduction

Survey plays a predominant role in every walk of life. Now-a-days such as to know or to assess the economic status of the people, the birth rate, the literates and illiterates and health status of among the society of peoples. Over a span of seventy three years of independence tribal of our country are yet to achieve significant development in the fields of Physical Education, health and wellness. 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. Physical activity offers opportunities to develop basic motor skills that are essential for healthy active living. The 2008 American Physical Activity (PA) Guidelines recommended that school-aged children and adolescents participate in at least 60 min of moderate-to-vigorous PA each day (US Dept-2008) However, most children are not engaged in the recommended amount of PA [Oretega *et al.*, 2008] [2]. Cardiovascular fitness is also important because cardiovascular fitness is inversely associated with being overweight in children and adolescents [Ruiz *et al.*, 2007] [3]. Children with a low fitness level are more likely to become overweight or obese over time than those with a high fitness level [Hussey *et al.*, 2007] [4]. Physical fitness is also a stronger predictor of total and abdominal obesity than PA for children and adolescents. The term 'physical activity' can mean many different things to different people. For public health professionals, it is a health enhancing behavior; others may see it as a phrase summing up a wide range of sports, leisure pursuit or active travel. But it is easy to forget that physical activity or human movement is actually one of the most basic human functions.

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Body composition is the ratio of fat to fat-free weight and is often expressed as percent body fat. Physical fitness of an individual depends on body composition age, sex, training, nutritional status and environmental factors. The prevalence of childhood obesity continues to increase globally and while the increase is frequently attributed to a decline in physical activity (PA), a remarkable lack of consistency exists in the relations between reported levels of physical activity and degrees of fatness. This inconsistency could be due to methodological flaws in assessing activity and inactivity of body composition (Rennie *et al.*, 2005) ^[10]. Flexibility has two components, dynamic and static. Where dynamic flexibility is the opposition or resistance of a joint to motion, that is the forces opposing movement rather than the range of movement itself. Static flexibility is the range of motion about a joint, typically measured as the degree of arc at the end of joint movement.

Objectives of The Study

1. The main objective of the study was to find out the status of body composition and flexibility levels among Tribal school boys of Villupuram District of Tamil Nadu.
2. To prepare Health Related physical fitness variables of norms for Tribal School Boys.
3. Further to find the influence of physical activities with yogaasana programme on body composition and flexibility levels among Tribal school boys of Villupuram District of Tamil Nadu.

Methodology

To survey the collection of data this study total (N= 960 boys) selected subjects from Villupuram District tribal schools. The subjects age ranged between 12 to 15 years. The subjects from the following schools ekalvaa Model Hr. Sec. Residential School (School - I), Villimalai, Danis Mission Hr. Sec. School, Kariyalur (School - II), Govt, Tribal Residential School, Kattaputtur (School - III), Govt. Tribal Residential School, Innadu (School - IV), Govt, Tribal Residential School, Maniyarpalayam (School - V), D.M.P.B. Good Shepherd Hr. Sec. School, Melnelavu (School -VI), Nallameiyappan Hr. Sec. School, Serapattu (School - VII), Intake Metriculation School, Vellimalai (School - VIII). The selected criterion variables body composition assessed with slim glide caplier and flexibility tested with sit and reach test. The collected data were treated with one way ANOVA and hull scale for percentiles.

The level of significant fixed at 0.05. The results shows that minimum requirement not attain fitness levels of the tribal school children. Further remedial measures taken 120 subjects were selected. The subjects divided into two equal group. The group-I consist of sixty subjects experimental group they undergone to physical exercises with yogaasanas training up to 12 weeks. The group-II acted as control group. The data were assessed dependent 't' test and analysis of covariance. The level of significant was fixed 0.05.

Results

Table 1: Anova for different age group of tribal school boys on body composition of Villupuram dt- Tamil Nadu

	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	SOV	SS	df	MS	'F'
\bar{X}	21.3	21.4	21.4	21.4	21.6	21.3	21.5	21.5	B	11.113	7	1.588	1.201
S.D	1.08	1.21	1.06	1.18	1.28	1.02	1.22	1.18	W	1258.383	952	1.322	

Not Significant. The level of significant 0.05 with df 7 & 952 table value 2.01

Table – 1 shows the body composition of tribal school boys of different schools of Tamil Nadu. From the table it was clear the obtained 'F'- value 1.201 which is lesser than table value (2.01) required for not significant at 0.05 level with df 7 and

952. The results of the study indicates that among the different tribal school boys of Tamil Nadu no significant difference were found on body composition.

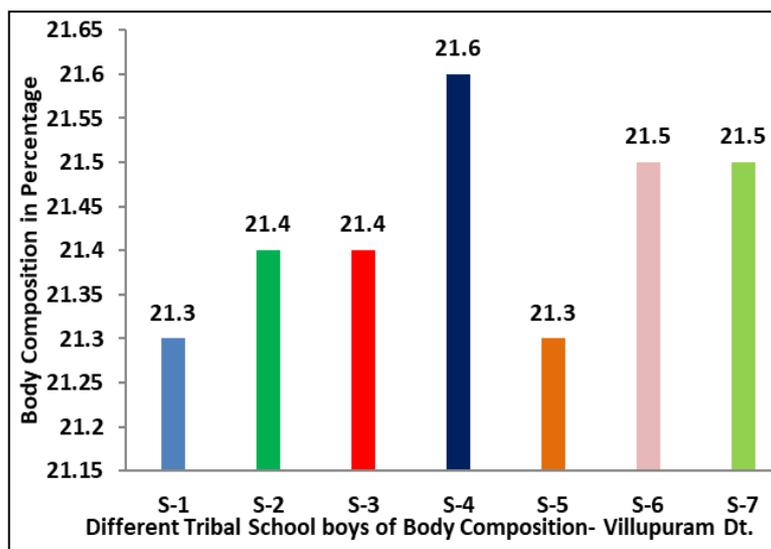


Fig 1: Mean Values of body composition on various tribal schools in Villupuram District-Tamil Nadu

Table 2: Anova for different age group of tribal school boys on flexibility of Villupuram district-Tamil Nadu

	S-1	S-2	S-3	S-4	S-5	S-6	S-7	S-8	SOV	SS	Df	MS	'F'
\bar{X}	19.9	20.2	20.3	20.2	20.1	20.1	20.1	20.4	B	17.716	7	2.531	1.782
S.D	1.22	1.24	1.13	1.23	1.12	1.28	1.06	1.25	W	1352.025	952	1.420	

Not Significant. The level of significant 0.05 with df 7 & 952 table value 2.01

Table – 2 shows the flexibility of tribal school boys of different schools of Tamil Nadu. From the table it was clear the obtained 'F'- value 1.782 which is are lesser than table value (2.01) required for not significant at 0.05 level with df 7 and 952. The results of the study indicates that among the different tribal school boys of Tamil Nadu no significant difference were found on flexibility.

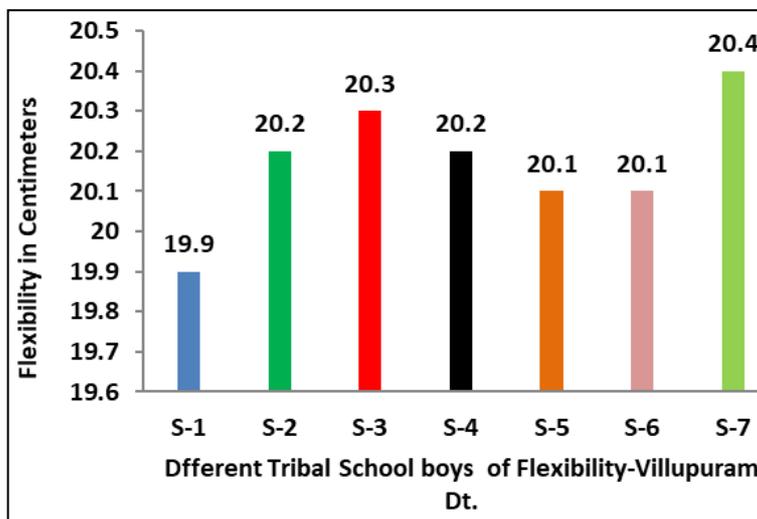


Fig 2: Mean Values of flexibility on various tribal schools in Villupuram District - Tamil Nadu

Table 3: Norms for tribal school children for different age groups body composition and flexibility

Score	Body Composition	Flexibility
100	25.49	24.38
90	24.69	23.55
80	23.88	22.71
70	23.08	21.88
60	22.27	21.05
50	21.47	20.22
40	20.66	19.38
30	19.86	18.54
20	19.05	17.71
10	18.25	16.88
0	17.44	16.04
Mean	21.47	20.22
S.D	1.15	1.19

The table-3 shows that construct the norms for the selected body composition and flexibility) variables of different tribal schools of Villupuram district-Tamil Nadu.

The calculated standard deviation is multiplied by 0.70 to get

the hull scale value. The hull scale value is serially added and subtracted to the mean score to get the percentile score.

Remedial Measures Programme Results

Table 4: Computation of 't' results on experimental and control groups of remedial measures on physical activities of body composition on tribal school boys

Group	Test	Mean	SD	Df	't' Ratio	table-Value	Magnitude of improvement in%
Experimental Group	Pre-Test	23.46	0.571	59	9.10*	2.01	7.28%
	Post Test	21.87	0.769				
Control Group	Pre-Test	23.53	0.681	59	0.355	2.01	0.28%
	Post Test	23.60	0.770				

*Significant. Level of significant 0.05 table value 2.01 with df 59.

Table-4 Indicates experimental and control group of body composition mean and standard deviation of tribal school boys. The experimental group pre and post test mean values are 23.46 and 21.87 and standard deviation values are 0.57 and 0.76 and obtained't' value is 9.10 which is greater than table value 2.01 with df 59. And control group mean values

are 23.53 and 23.60 and standard deviation 0.68 and 0.77. The results of the study 't' value 0.355 which is lesser than table value 2.01. The finding of the study indicates that experimental group significant reduction on body composition due to physical activities training of tribal school boys of Villupuram Dt.

Table 5: Analysis of covariance on body composition of physical activities and control group of tribal schools –Villupuram dt-Tamil Nadu

Test		Physical Activities Group	Control Group	SOV	SS	df	MS	'F' Ratio	P-Value
Pre-Test	Mean	23.46	23.53	B	0.067	1	0.067	0.169	0.683
	SD	0.571	0.681	W	22.933	58	0.395		
Post Test	Mean	21.87	23.60	B	44.721	1	44.72	75.49*	0.000
	SD	0.765	0.770	W	34.359	58	0.592		
Adjusted Post Test	Mean	21.89	23.57	B	42.269	1	42.26	101.87*	0.000
				W	23.647	57	0.415		

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

It is clear from the table-5 that the pre test ($F = 0.169$, $p > 0.05$) showed no significant difference in body composition. However, post ($F = 75.49$, $p < 0.05$) and adjusted post test mean ($F = 101.87$, $p < 0.05$) value showed significant

difference. The covariate is significant, indicating that body composition after training had a significant altered after 12 weeks of physical activities training of tribal school boys of Villupuram Dt.-Tamil Nadu

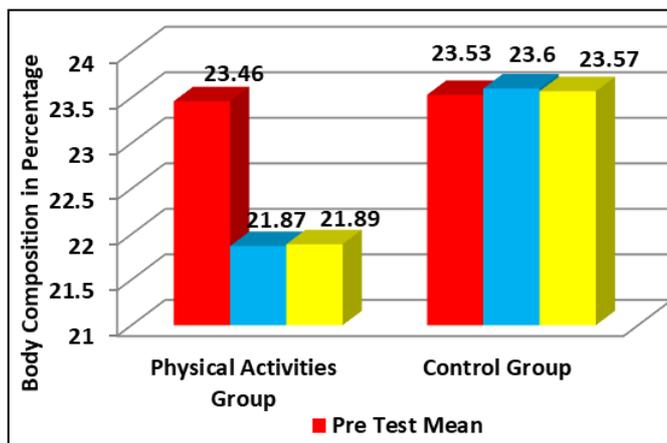


Fig 3: The mean values of body composition physical activities training and control group of tribal school boys Villupuram Dt-Tamil Nadu

Table 6: Computation of 't' results on experimental and control groups of remedial measures on physical activities of flexibility on tribal school boys

Group	Test	Mean	SD	Df	't' Ratio	Table - Value	Magnitude of improvement in%
Experimental Group	Pre-Test	18.83	0.592	59	13.49*	2.01	11.30%
	Post-Test	21.23	0.773				
Control Group	Pre-Test	18.80	0.406	59	1.33	2.01	0.87%
	Post-Test	18.96	0.490				

Table-6 Indicates experimental and control group of flexibility mean and standard deviation of tribal school boys. The experimental group pre and post test mean values are 18.83 and 21.23 and standard deviation values are 0.59 and 0.77 and obtained 't' value is 13.49 which is greater than table value 2.01 with df 59. And control group mean values are

18.80 and 18.96 and standard deviation 0.40 and 0.49. The results of the study 't' value 1.33 which is lesser than table value 2.01. The finding of the study indicates that experimental group significant improvement on flexibility due to physical activities training of tribal school boys of Villupuram Dt.

Table 7: Analysis of covariance on flexibility of physical activities and control group of tribal schools –Villupuram dt-Tamil Nadu

Test		Physical Activities Group	Control Group	SOV	SS	df	MS	'F' Ratio	P-Value
Pre-Test	Mean	18.83	18.80	B	0.01	1	0.01	0.06	0.800
	SD	0.592	0.406	W	14.96	58	0.25		
Post-Test	Mean	21.23	18.96	B	77.06	1	77.06	183.69*	0.000
	SD	0.773	0.490	W	24.33	58	0.42		
Adjusted Post Test	Mean	21.22	18.98	B	75.63	1	75.63	227.35*	0.000
				W	18.96	57	0.33		

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

It is clear from the table-7 that the pre test ($F = 0.06$, $p > 0.05$) showed no significant difference in flexibility. However, post ($F = 183.69$, $p < 0.05$) and adjusted post test mean ($F = 227.35$, $p < 0.05$) value showed significant difference. The covariate is

significant, indicating that flexibility after training had a significant altered after 12 weeks of physical activities training of tribal school boys of Villupuram Dt.-Tamil Nadu

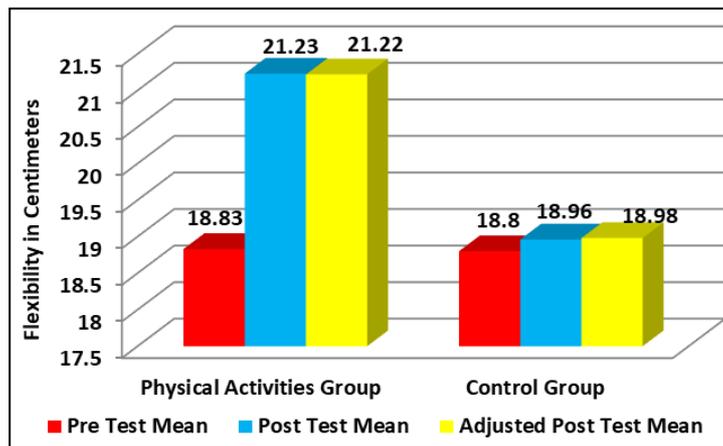


Fig 4: The mean values of flexibility on physical activities training and control group of tribal school boys Villupuram Dt-Tamil Nadu

Discussion on Findings

The results of the study shows that among the age groups no significant difference on body composition and flexibility. The results of line with that other studies also. Since 50% students are not attained minimum required levels. The similar studies conducted a “survey study on Health Related Physical Fitness among 1028 school boys between 14 to 16 years in Karnataka State.” The investigator analysed the influence of family area (rural and urban).It was found that there was a significant differences between rural and urban school boys in Muscular Endurance and cardio vascular endurance. Whereas in the case of flexibility, abdominal muscular strength, speed and agility not exist significant difference between Rural and Urban. (Suresh 1990) ^[5] and survey of physical fitness among tribal school boys of kurnool district of andhra pradesh and the influence of physical activities programme on them the results of the study shows that age wise norms were supported by the age wise mean difference in their performance on Pull Ups, Bent Knee Sit Ups, Shuttle Run, Standing Broad Jump, 50 Yard Dash and 600 Yard Run/Walk test (Lakshmanan & Subramaniam) and taken a study to “compare Health Related Physical Fitness variables between Tribal and Non-Tribal players. however there is no significant differences exists between Tribal and Non-Tribal players on flexibility (Mathews *et al.*, 2008) ^[8]. Conducted research on Nationally 34% of high school aged youth reported meeting the recommended amount of physical activity. The youth in this tribal community reported being much less active than the national average (Dharamsingh Meena *et al.*, 2012) ^[7]. Further remedial measures has taken effect of 12 weeks of physical activities training tribal school boys of villupuram dt. The results shows that significant reduction on body composition and significant improvement in flexibility of experimental group and compared with control group. The results line with that 12 weeks of physical activities significant changes in tribal boys. (Lakshaman Naik and Subramaniam (2018) & Moorthy 1982) ^[6, 9].

Conclusions

1. There is no significant difference of body composition and flexibility among the tribal school of boys of Villupuram Dt-Tamil Nadu.
2. There is significant changes in body composition physical activities training group and control group the tribal school of boys of Villupuram Dt-Tamil Nadu.
3. There is significant improvement in flexibility of physical activities training group compared with control group the tribal school of boys of Villupuram Dt-Tamil Nadu.

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