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Comparison of health-related physical fitness between migrated boys and Girls students from Naxal affected region of Chhattisgarh

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Abstract

The purpose of the study was to assess and compare the health-related physical fitness of migrated students from naxal region of Chhattisgarh. Two hundred migrated (Boys =100, Girls=100) students ranging ages between 14 to 18 years residing in salwa judum camp in naxal affected region of Chhattisgarh, were randomly selected for the present investigation. To assess the four components of health-related physical fitness of Migrated boys and girls students from naxal affected region of Chhattisgarh ranging fourteen to eighteen years of age, mean, standard deviation and t-ratio were computed. Results of the investigation revealed the significant differences existed between fourteen years of age boys and girls students of naxal affected region on modified sit-ups, sit and reach and body composition and insignificant difference on Cardio-respiratory Function component. Results of t-ratio also indicated the variance among migrated students naxal affected region of Chhattisgarh between both sexes in rest of age groups in their health-related physical fitness components. But they had also similarity on Cardiovascular endurance (14 &17 years of age), abdominal strength endurance (15 year of age). Cardiovascular endurance and body fat (16 years of age) and flexibility and body fat. (18 years of age) components of health-related physical fitness.

Keywords: Health, fitness, body fat, endurance, flexibility, strength

1. Introduction

The health-related physical fitness is a combination of every specific components that compose health related physical fitness which are cardio vascular endurance, muscle fitness, flexibility and body composition, it is not generally agreed that these components are related to development of health and that increase the functional capacity of the body.

Council of physical fitness and sports defined physical fitness as the ability to carry out daily tasks with vigor and alertness, with undue fatigue, and with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies physical conditioning program, which provides opportunity for the development and maintenance of physical fitness. It offers an opportunity for the facilitation of normal growth of a child and prevents the reversal factors of the performance such as speed, endurance, flexibility, strength and skill. By practicing the conditioning program, one experiences a number of changes which make possible better performance and faster recovery. Through repeated muscular work, strength is gained and as a result one is able to produce more power as there is faster contraction, which means, gain in both power and speed. Conditioning the body through regular exercise enables the individual to meet emergencies more effectively.

The concept of human health for it permits an efficient functioning during the day is same as physical fitness of an individual. It is also recognized as undertaking different type of physical activity during leisure time. So, the health-related fitness consisted of various components i.e. cardiovascular endurance, muscle strength, endurance, flexibility and body composition (AAHEPERED, 1984) [1].

Cardiovascular endurance and the aerobic exercise that develops it have been linked to reduced risk of coronary artery disease (Pate, *et al.* 1989) [8]

Many researchers have been conducted studies on Health-related physical fitness which refers to cardio-respiratory fitness, muscular strength, speed-agility and body composition

components of boys and girls in different age groups. Lamb, 1994 [6]; Marshall, Simon, Sarkin, Sallis, McKenzie, 1998 [7]; Goon Daniel Ter1, 2006; Verma *et al.*, 2002 [12]; Bakshi, 2001 [3]; Toriola & Monyeke, 2012 [11]; Ramajayam & Gopinath, 2013 [9]; Bazyar and Shabani, 2014 etc. investigated and compared the health-related fitness in male and female children of schools in different age groups.

Saha. & Halder (2012) [10] noticed that healthy body is necessary to increase the working capacity and to maintain health related physical fitness of an individual to perform his daily tasks vigorously, with left over energy to enjoy leisure time activities. Bandyopadhyay and Bandyopadhyay (2007) investigated the better cardio-respiratory fitness among males than female college students. They also found the higher values of all the physical parameters of health-related fitness in males. Physical fitness is a significant indicator of the health of children and also a good predictor of health in later life (Cvejic, Pejovic, Ostojic, 2013) [4].

Saha, G.C and Halder, S (2012) [10]. showed the significant difference between rural and urban school going children in all components of health-related fitness as well as the reaction ability. Rural school going children were found better than urban school going children.

Due to the naxalite violence, a lot of families are taking associating themselves with "Salva Judum" program in Chhattisgarh. The investigator feels that migrated student residing in these camps should be investigated in order to have hands on information regarding their health-related physical fitness.

Since June 2005, the Government of Chhattisgarh, with the support of the Home Ministry has been waging a counter-insurgency operation against the Naxalites in the guise of a 'spontaneous', 'self-initiated', 'peaceful', 'people's movement' named the Salwa Judum in Dantewada district of Chhattisgarh.

However, the fact is that the Salwa Judum is being actively supported by the Chhattisgarh Government. Far from being a peaceful campaign, Salwa Judum 'activists' are armed with guns, lathis, axes, bows and arrows. Main objective of the study was assess and compare the health related physical

fitness of migrated students from naxal region of Chhattisgarh.

2. Methodology

2.1 Selection of subjects

A total of two hundred migrated (Boys =100, Girls=100) students ranging ages between 14 to 18 years residing in salwa judum camp in naxal affected region of Chhattisgarh, were randomly selected for the present investigation. Out of these salwa judum camp in naxal affected region, as many as 20 boys and 20 girls for each age group were randomly selected to be the subjects of the study.

2.2 Selection of variables

To collect data on health-related physical fitness, the cardiovascular endurance, strength and strength endurance of abdominal muscles, flexibility of back and hamstring muscles and amount of body fat were selected,

2.3. Selection of tests

To collect data on cardiovascular endurance, strength and strength endurance of abdominal muscles, flexibility of back and hamstring muscles and amount of body fat, selected subjects were tested on four health-related physical fitness test items i.e. modified bent/knee sit-ups for one minute, 1.5 mile run/walks test, sit and reach test and triceps and sub-scapular skin folds respectively.

2.4 Statistical techniques

To assess the four components of health-related physical fitness of Migrated boys and girls students from naxal affected region of Chhattisgarh ranging fourteen to eighteen years of age, mean, standard deviation and t-ratio were computed.

3. Results

To determine the significance of difference between mean scores of migrated boys and girls on four components of health-related physical fitness t-ratio was computed and data pertaining to this has been presented in table 1 to 5

Table 1: Significance of difference between mean scores on different components of health-related physical fitness of boys and girls students of fourteen years of age

S. No.	Components	N	Sex	Mean	M.D.	□ D.M.	t-ratio
1.	Modified Sit-ups	20, 20	Boys, Girls	22.95, 15.90	1.71	0.69	4.13*
2.	Cardio-respiratory Function	20, 20	Boys, Girls	14.21, 13.46	10.75	0.76	0.98
3.	Sit and Reach	20, 20	Boys, Girls	30.18, 33.71	3.53	1.63	2.15*
4.	Body composition	20, 20	Boys, Girls	11.06, 13.28	2.22	0.98	2.26*

*Significant at .05 level, $t_{.05(38)}=2.02$

It is quite obvious from Table 1, that statistically significant differences existed between fourteen years of age boys and girls students of naxal affected region of Chhattisgarh on three components of health related physical fitness, as the obtained t-values of 4.13, 2.17 and 2.26 on modified sit-ups, sit and reach and body composition respectively were higher

than the required $t_{.05(38)}=2.02$. But significant difference was not observed between fourteen years of age boys and girls students of naxal affected region of Chhattisgarh on Cardio-respiratory Function component of health related physical fitness, as the obtained t-value of 0.98 was less than the required value to be significant.

Table 2: Significance of difference between mean scores on different components of health-related physical fitness of boys and girls students of fifteen years of age

S. No.	Components	N	Sex	Mean	M.D.	□ D.M.	t-ratio
1.	Modified Sit-ups	20, 20	Boys, Girls	19.50, 16.30	3.20	2.13	1.51
2.	Cardio-respiratory Function	20, 20	Boys, Girls	11.98, 12.32	0.34	0.16	2.19*
3.	Sit and Reach	20, 20	Boys, Girls	23.45, 30.81	7.36	1.59	4.64*
4.	Body composition	20, 20	Boys, Girls	11.55, 16.76	5.21	2.14	2.44*

*Significant at .05 level, $t_{.05(38)}=2.02$

It is quite obvious from Table 2 that statistically significant differences existed between fifteen years of age boys and girls students of naxal affected region of Chhattisgarh on three components of health related physical fitness, as the obtained t-values of 2.19, 4.64 and 2.44 on Cardio-respiratory Function, sit and reach and body composition respectively

were higher than the required $t_{.05}(38)=2.02$. But significant difference was not observed between fifteen years of age boys and girls students of naxal affected region of Chhattisgarh on modified sit-ups component of health related physical fitness, as the obtained t-value of 1.51 was less than the required value to be significant.

Table 3: Significance of difference between mean scores on different components of health related physical fitness of boys and girls students of sixteen years of age

S. No.	Components	N	Sex	Mean	M.D.	□ D.M.	t-ratio
1.	Modified Sit-ups	20, 20	Boys, Girls	28.15, 17.65	10.50	2.20	4.77*
2.	Cardio-respiratory Function	20, 20	Boys, Girls	11.97, 12.73	0.76	0.46	1.64
3.	Sit and Reach	20, 20	Boys, Girls	34.22, 29.84	4.38	2.16	2.03*
4.	Body composition	20, 20	Boys, Girls	12.15, 12.88	0.73	0.77	0.94

*Significant at .05 level, $t_{.05}(38)=2.02$

It is quite obvious from Table 3, that statistically significant differences existed between sixteen years of age boys and girls students of naxal affected region of Chhattisgarh on health related physical fitness components, as the obtained t-values of 4.77 and 2.03 on modified sit-ups and sit and reach respectively were higher than the required $t_{.05}(38)=2.02$. But

significant difference was not observed between sixteen years of age boys and girls students of naxal affected region of Chhattisgarh on Cardio-respiratory Function and body composition components of health related physical fitness, as the obtained t-values of 0.98 and 0.94 were lesser than the required value to be significant.

Table 4: Significance of difference between mean scores on different components of health related physical fitness of boys and girls students of seventeen years of age

S. No.	Components	N	Sex	Mean	M.D.	□ D.M.	t-ratio
1.	Modified Sit-ups	20, 20	Boys, Girls	25.95, 17.15	8.80	3.01	2.93*
2.	Cardio-respiratory Function	20, 20	Boys, Girls	12.08, 13.65	1.57	0.47	3.35*
3.	Sit and Reach	20, 20	Boys, Girls	30.61, 31.99	1.38	2.77	0.49
4.	Body composition	20, 20	Boys, Girls	15.54, 18.31	2.77	1.85	1.49

*Significant at .05 level, $t_{.05}(38)=2.02$

It is quite obvious from Table 4, that statistically significant differences existed between seventeen years of age boys and girls students of naxal affected region of Chhattisgarh on three components of health related physical fitness, as the obtained t-values of 2.93 and 3.35 on modified sit-ups and Cardio-respiratory Function, respectively were higher than the

required $t_{.05}(38)=2.02$. But significant difference was not observed between seventeen years of age boys and girls students of naxal affected region of Chhattisgarh on sit and reach and body composition components of health related physical fitness, as the obtained t-values of 0.49 and 1.49 were lesser than the required value to be significant.

Table 5: Significance of difference between mean scores on different components of health related physical fitness of boys and girls students of eighteen years of age

S. No.	Components	N	Sex	Mean	M.D.	□ D.M.	t-ratio
1.	Modified Sit-ups	20, 20	Boys, Girls	17.15, 13.80	3.35	1.39	2.39*
2.	Cardio-respiratory Function	20, 20	Boys, Girls	13.65, 14.21	0.56	0.60	0.92
3.	Sit and Reach	20, 20	Boys, Girls	31.99, 28.67	3.32	1.74	1.90
4.	Body composition	20, 20	Boys, Girls	18.31, 14.31	4.00	2.24	1.76

*Significant at .05 level, $t_{.05}(38)=2.02$

It is quite obvious from Table 5, that statistically significant differences existed between eighteen years of age boys and girls students of naxal affected region of Chhattisgarh on modified sit-ups, component of health related physical fitness, as the obtained t-value of 2.39 was high than the required $t_{.05}(38)=2.02$. But significant differences were not observed between eighteen years of age boys and girls students of naxal affected region of Chhattisgarh on Cardio-respiratory Function, sit and reach and body composition components of health related physical fitness, as the obtained t-values of 0.92, 1.90 and 1.76 were lesser than the required value to be significant.

differences existed between fourteen years of age boys and girls students of naxal affected region on modified sit-ups, sit and reach and body composition and insignificant difference on Cardio-respiratory Function component. In the same way, t-ratio indicated the variance among migrated students naxal affected region of Chhattisgarh between both sexes in rest of age groups in their health related physical fitness components. But they had also similarity on Cardiovascular endurance (14 & 17 years of age), abdominal strength endurance (15 year of age). Cardiovascular endurance and body fat (16 years of age) and flexibility and body fat. (18 years of age) components of health related physical fitness.

4. Discussion

To determine the significance of difference between mean scores of migrated boys and girls on four components of health related physical fitness, t-ratio resulted significant

5. Conclusions

1. Fourteen as well as seventeen years boys and girls students from naxal affected region had significant differences in their abdominal strength endurance,

- flexibility and body fat. But they had similarity amount of Cardiovascular endurance.
2. Fifteen years of age boys and girls students from naxal affected region had significant differences in their Cardiovascular endurance, flexibility and body fat. But they had similarity in abdominal strength endurance.
 3. Sixteen years of age boys and girls' students from naxal affected region had significant variance in abdominal strength endurance and Cardiovascular endurance and similarity in Cardiovascular endurance and body fat.
 4. Seventeen years of age boys' and girls' students from naxal affected region had significant variance in abdominal strength endurance and Cardiovascular endurance and similarity in flexibility and body fat.

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