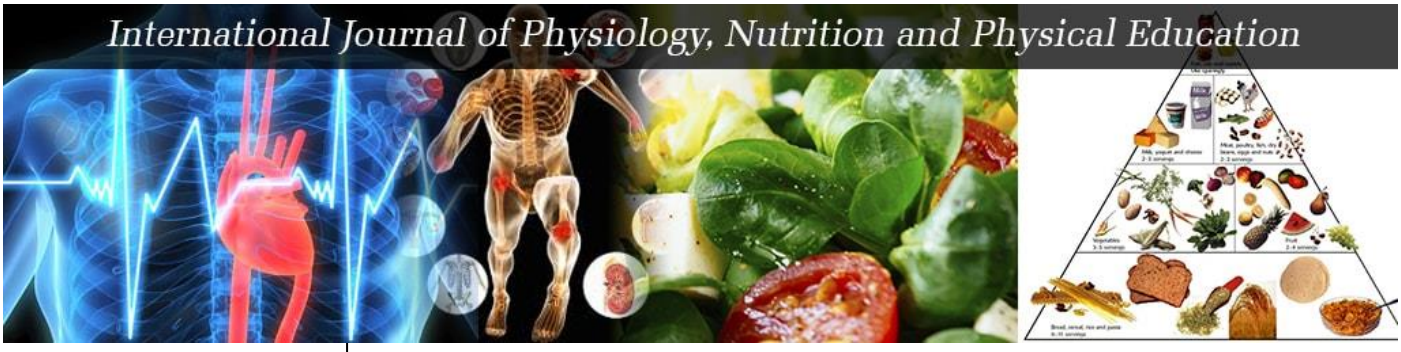

ISSN: 2456-0057
IJPNPE 2019; 4(2): 238-240

www.journalofsports.com
Received: 28-05-2019
Accepted: 29-06-2019

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A study on the health related physical fitness of urban and rural high school children of Bangalore district

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Abstract
The aim of the study was to analyze the Health Related Physical Fitness of rural and urban high school children of Bangalore Urban and Rural district, for the study, a total of 1,200 boys within the age group of 12 to 15 yrs. Were Selected as subjects for the present study. Out of them 600 were boys from Bangalore rural district and the rest 600 were from Bangalore urban district. Candidates from each of four age groups viz. 12 yrs., 13 yrs., 14 yrs. and 15 yrs. respectively. Physical Fitness of the samples selected for the study was assessed by measuring the components of Health Related Physical Fitness as prescribed by AAHPERD (1984). Fitness components measured were cardio respiratory endurance (measured by one mile run), low back and hamstring flexibility (measured by sit and reach), abdominal muscle strength endurance (measured by bent knee sit-ups in one minute). Body height and weight were also measured for analyzing the growth status the collected were subjected to SD and t value statistical techniques, The results of the study indicated the status of growth and motor fitness of the total boys group, the growth status and the status of Health Related Physical Fitness of rural and urban children were analyzed separately. The urban school children had greater mean body height and body weight in comparison with the rural children. In the cardio vascular endurance measured by one mile run test all the age groups from 12 yrs. to 15 yrs. of rural children are better than the urban children. In low back and hamstring flexibility as measured by Sit and Reach test the different age groups of rural area children were better than the urban children. In body composition, the urban children had greater skin fold measurements and more percent body fat than the rural children.

Keywords: Cardio respiratory endurance, low back and hamstring flexibility, abdominal muscle strength endurance

Introduction
In the recent days, children's interest in physical activity is gradually increasing; this might be the reason of awareness among parents and guardians. A large number of student populations can be seen practicing various physical activities and getting the most benefits of out those physical activities. The academic benefits of physical exercises have been rightly marked with their improvements in the grades. Innovative fitness programmes have been designed to meet the individual need of the students to the maximum, the major health related physical fitness components usually measured are Muscular strength, Muscular strength, Cardio-vascular endurance, Body composition, and Flexibility. The tests which have been formulated to measure these fitness components were usually the indicators of physiological function and motor fitness of the individual who is measured. The idea of developing fitness testing of health related physical fitness in high school children are an essential need now, especially for Indian population, because all these years we were referring the fitness tests which have been developed to a different population, many major tests have been developed during the years, such as The AAHPERED Health Related Physical Fitness Test battery (AAHPERD, 1980) which includes test items and norms and allows the teacher to diagnose students fitness level and so that may lead to the effective implementation of fitness programme, to promote their fitness level to the optimum. The next health related fitness test which was developed was Fit Youth Today (FYT). It was considered important as it set the standard for the new health - related physical fitness program (1986). It was published after the development of AAHPERD HRPF. It included a complete program of health related fitness for all school aged children. Now a day the popular test among the lot is FITNESSGRAM, the test was developed at

Cooper clinic in 1992, it is considered as one of the comprehensive youth fitness program with the aim of measuring health related fitness with the quality measurement and developed educational materials, it was not only framed to enhance physical fitness but also to have a positive, affective, cognitive and behavioral elements to improve the participation in physical activity.

The purpose of the study

was to analyze the Health Related Physical Fitness of rural and urban high school children of Bangalore Urban and Rural district, a total of 1,200 boys within the age group of 12 to 15 yrs. Were Selected as subjects for the present study. Out of them 600 were boys from Bangalore rural district and the rest 600 were from Bangalore urban district. Candidates from each of four age groups viz. 12 yrs., 13 yrs., 14 yrs. and 15 yrs. respectively. Physical Fitness of the samples selected for the study was assessed by measuring the components of Health Related Physical Fitness as prescribed by AAHPERD (1984). Fitness components measured were cardio respiratory endurance (measured by one mile run), low back and hamstring flexibility (measured by sit and reach), abdominal muscle strength endurance (measured by bent knee sit-ups in one minute). Body height and weight were also measured for analyzing the growth status. For the study, during data collection the tools, techniques and instruments used are here as follows: Stadiometer for measuring standing height in cm, weighing machine for measuring the body weight in kg of the subjects, skin fold caliper for measuring the skin folds in mm. Sit and reach box for measuring low back and hamstring flexibility, Electronic stop watch for measuring time.

Statistical analysis

For analysis of data standard deviation was calculated as the measure of variability. The significance of the difference between two means was tested by calculating "t" value.

Results of the study

The results of the study indicated the status of growth and motor fitness of the total boys group, the growth status and the status of Health Related Physical Fitness of rural and urban children were analyzed separately. The mean values of height, weight and other Health Related Physical Fitness components for rural and urban children have been presented in Table 1 and Table 2 respectively.

It is evident from the table values that there was difference in height, weight and other HRPF parameters between rural and urban groups of subjects in each age group. Mean values revealed that the urban boys had greater mean values in height and weight in all age groups selected for the study. This indicated that the physical growth status of urban children was better than rural children.

Table 1: Mean and SD of Height, Weight and HRPF Components of Rural Boys

Age	Height in (cms)	Weight in (kgs)	One mile run (Sec)	Sit-ups (Nos)	Sit an Reach (cms)	Skin fold (mm) 2 areas	Percent of body fat (%)
12yrs.	143.21± 8.53	30.34±4.31	465.50±60.17	23.75±6.20	32.97± 6.50	15.24±4.12	11.96±4.45
13 yrs.	147.33±7.15	32.56± 5.49	460.35±62.36	26.24±7.56	34.57± 5.65	14.35±4.67	12.45±4.01
14 yrs.	153.10±6.88	40.23±6.50	459.56± 63.42	30.45±6.54	36.62±4.87	14.39i±4.78	12.57±4.65
15 yrs	158.87± 4.76	45.47±7.66	455.58± 45.37	36.37±7.44	40.03±5.26	15.84±6.11	13.55±4.80

Table 2: Mean and SD of Height, Weight and HRPF Components of Urban Boys

Age	Height in (cms)	Weight in (kgs)	One mile run (Sec)	Sit-ups (nos)	Sit and Reach (cms)	Skin fold (mm) 2areas	Percent of body fat (%)
12yrs.	147.13±9.13	35.59± 4.50	598.87± 75.64	22.45±7.91	27.26±5.45	24.01±8.72	21.56±6.25
13 yrs.	150.03±7.32	38.35± 6.02	584.40± 63.54	25.23±7.02	30.43±4.80	23.37±8.53	22.75±5.24
14 yrs.	158.97±7.87	45.67± 12.10	575.35± 60.41	30.10±7.23	32.43±7.35	25.35± 11.02	24.22±6.42
15 yrs	160.32±6.70	48.36±9.04	568.35± 57.03	33.89±7.27	34.55±6.43	26.54±12.34	23.66±6.53

On the other hand the rural children were found better in performance of Motor Fitness Tests, like one mile run, sit-ups, and sit and reach. This difference between physical growth and motor fitness might be due to the difference in the percentage body fat, between urban children in each age group selected for the study. In order to test the significance of the difference between two means of rural and urban children in each of the age groups "t" test was calculated.

The "t" test results revealed that the mean values of urban boys in height were significantly greater than the rural groups; The mean values of urban boys in body weight of different age groups were significantly more than those of the rural boys groups. Results also indicated that in one mile run the rural boys were significantly better in each age group than the urban boys groups. Results also reveled that the rural boys were significantly better than urban boys in sit-ups for 9 yrs. to 13 years. But significant difference ceased up for the age groups of 14 yrs. and 15 yrs, the results of sit and reach tests indicating the flexibility of the subjects. As per results the rural boys were better than the urban boys significantly at 0.01 level in each age group. the means of sum of 2 skin-folds measurements for different age groups of rural and urban sections. It is clear from the table values that the sums of skin fold measurements of urban boys were significantly more than the rural boys in each age group. This clearly indicates that the urban boys had more amount of fat than their rural counterparts. These have been supported by the results shown in Table-1 that indicates the percent of body fat.

Conclusions

Within the limited purview of the study conducted the following conclusions were drawn on the basis on results obtained through statistical analysis of data and interpretation of results.

The urban school children had greater mean body height and body weight in comparison with the rural children. In the cardio vascular endurance measured by one mile run test all the age groups from 12 yrs. to 15 yrs. of rural children are better than the urban children. In low back and hamstring flexibility as measured by Sit and Reach test the different age groups of rural area children were better than the urban children. In body composition, the urban children had greater skin fold measurements and more percent body fat than the rural children.

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