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Comparative study of health related physical fitness components between government school and public school girls

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Abstract

The propose of present study was to compare the health related physical fitness components between government school and public school girls. Thirty (30) girl's students from Public schools and Thirty (30) girl's students from government schools from patiala district punjab were selected as subjects. The age of the subjects were ranged from 10-16 years. The health related physical fitness components were Body Composition (fat percentage), Flexibility, Muscular Endurance, and Muscular Strength. Body composition was measured in mm by skin fold caliper (biceps, supraillium and sub scapula region), Muscular endurance was measured by the numbers of completed bent keen sit ups in one minute. Muscular strength was measured by maximum lift by a subject in K.g. and Flexibility was recorded in cm by sit and reach test. The data collected on health related physical fitness components was analyzed by independent "t" test. The level of Significance was set at 0.05 levels ($p < 0.05$). There was a significant difference of health related physical fitness between Public School girls and Govt School girls. Body Composition means of public school girls was more in comparison to Govt School girls. Govt. School Girls showed a better performance in Muscular Endurance, Muscular Strength and Flexibility.

Keywords: health related, physical fitness, government school, public school girls

Introduction

Health related physical fitness is an important aspect of an individual. A physical fit person is an asset for society and an unhealthy person is burden for society. Concept of physical fitness is as old as humankind throughout the history of mankind physical fitness has been considered an essential element of everyday life. The ancient people were mainly dependent upon their individual strength, vigor and vitality for physical survival. This involved mastery of some basic skill like strength, speed, endurance, agility for running, jumping, climbing and other skills employed in hunting for their livings. The expert committee of the World Health Organization described physical fitness as "the ability to undertake muscular work satisfactorily." Physical fitness is the capacity to early out, reasonably well, various forms of physical activities, without being unduly tired and includes qualities important to the individual's health and well-being. Every person has a different level of physical fitness which may change with time, place of work, situation and there is also an interaction between the daily activities, and the fitness of an individual, the point if where to put the level of optimum fitness.

Methods

Subjects: Thirty (30) girl's students from Public schools and Thirty (30) girl's students from government schools from Patiala district Punjab were selected as subjects. The age of the subjects were ranged from 10-16 years.

Objective of the study

1. To examine the percentage body fat (body composition) between government school and public school girls.
2. To find out the muscular strength between government school and public school girls.
3. To measure the muscular endurance between government school and public school girls.

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4. To examine the flexibility between government school and public school girls.

Hypotheses

It was hypothesized that there would be a significant difference between government school and public school students in relation to health related physical fitness components.

Criterion Measures

The health related physical fitness components were Body Composition (fat percentage), Flexibility, Muscular Endurance, and Muscular Strength. Body composition was measured in mm by skin fold caliper (biceps, suprailium and sub scapula region), Muscular endurance was measured by the numbers of completed bent knee sit ups in one minute. Muscular strength was measured by maximum lift by a subject in K.g. and Flexibility was recorded in cm by sit and reach test.

Statistical procedure

The data collected on health related physical fitness components was analyzed by independent “t” test. The level of Significance was set at 0.05 levels ($p < 0.05$).

Results

The Mean values of the variables of both groups are given in Tables.

Table 1: Significance of difference of mean of public school and govt school girls in body composition

Subjects	Mean	S.D	Differ. of Mean	't' ratio
Public School girls	22.80	2.34	5.90	4.83*
Govt school girls	16.9	4.58		

*Significant at 0.05. $t(28) = 2.048$

Mean value of body composition in percentage

Table 2: Significance of difference of mean of public school and govt school girls in muscular strength

Subjects	Mean	S.D	Differ. of Mean	't' ratio
Public School girls	44.43	10.33	-13.96	7.89*
Govt school girls	58.4	9.14		

*Significant at 0.05. $t(28) = 2.048$

Table 3: Significance of difference of mean of public school and govt school girls in muscular endurance

Subjects	Mean	S.D	Differ. of Mean	't' ratio
Public School girls	14.26	2.43	-3.07	6.09*
Govt school girls	17.33	3.00		

*Significant at 0.05. $t(28) = 2.048$

Table 4: Significance of difference of mean of public school and govt school girls in flexibility

Subjects	Mean	S.D	Differ. of Mean	't' ratio
Public School girls	7.54	1.77	-2.6	8.41*
Govt school girls	10.15	2.80		

*Significant at 0.05. $t(28) = 2.048$

Discussion of findings

Physical fitness is fundamental to public health. This has an influence on the risks of morbidity and mortality, and therefore can reduce these risks. Disease prevention and health promotion should be implemented as early as possible both in childhood and adolescence. Previous studies have focused on specific health behavior. The results of the ‘t’

value showed significant differences in body composition, muscular endurance and muscular strength and flexibility between Government School girls and Public school girls, where Government School girls were found superior than their counterparts. With reference to strength component Government School girls are much stronger than public School girls. Tsimeas and Tsigilis (2005) [6] conducted a study on Greek rural students to find out “Does living in urban or rural settings effect aspects of physical fitness in children”. A similar type of results were obtained in the work of Mehtap and Nihal (2005) [4] who conducted a study on physical fitness in rural children compared with urban children in Turkey and found that children living in the urban areas were more inactive and obese than rural children. The finding of the study indicated that there was a statistically significant difference between Government School girls and Public school girls on selected health related physical fitness components such as body Composition ($t_{cal}=4.83 > t_{tab}=2.048$), Muscular Strength ($t_{cal}=7.89 > t_{tab}=2.048$), Muscular Endurance ($t_{cal}=6.09 > t_{tab}=2.048$) and Flexibility ($t_{cal}=8.41 > t_{tab}=2.048$).

The results of study indicated that the mean of Body Composition in Public School girls were more in comparison to Govt Girls School. The reason for this was attributed to the subjects selected for the study was from high economic status, and they were more instance of food especially consuming junk food. One of the other reasons may be less participation in physical activity and more emphasized on academic part. Govt. School Girls showed a high mean value in Muscular Strength, Muscular Endurance and Flexibility. The reason for this attributes to their more involvement in physical work, off and on the field. The subjects were from middle class family and therefore more involved in their household activity and walked 3-4 km a day while coming to school. Participation in games class was compulsory of them. These all reason contributed to make them more physically fit in terms of selected variables.

Conclusions

Within the limitations of the study the following conclusion is drawn:

1. There was a significant difference of health related physical fitness between Public School girls and Govt School girls.
2. Body Composition means of public school girls was more in comparison to Govt School girls.
3. Govt. School Girls showed a better performance in Muscular Endurance, Muscular Strength and Flexibility.

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