

A COMPARISON OF PHYSICAL FITNESS AND ACADEMIC PERFORMANCE OF MALE AND FEMALE CHILDREN OF ENGLISH MEDIUM SCHOOL

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ABSTRACT

The purpose of this study was to investigate the relationship between physical fitness and academic achievement of male and female children. The present study was based upon the male and female children of 7th class belong to Krishana Public School Koni Bilaspur. Fifty (Males=25, Females= 25) subjects were selected. The President's Challenge Physical Fitness test is designed to assess students based on five areas of physical fitness abdominal/core muscle strength and endurance (sit-ups), upper body strength and endurance (pull-ups), flexibility (sit and reach), agility (shuttle run), and cardiopulmonary endurance (mile run). The academic achievement was based upon the current academic year of each student in form of total mark obtain in the five subjects at 7th examinations. The mean age of male and female subjects were 13.40 ± 0.57 and 13.28 ± 0.64 respectively studying in 7th class. . To find out the relationship between academic achievement and five physical fitness components of adolescence male and female children means, and standard deviations were computed. The Pearson's Product Moment Correlation coefficients were calculated. The results were also compared with the adequate significant value at .05 level of confidence. Results of the study concluded that this study provided varying correlations between physical fitness and academic achievement among male and female students. Academic achievement of female children did not correlated with the five test items of President's Challenge Physical Fitness. Male children were found to have significant relationship between academic achievement and upper body strength followed by flexibility and other fitness components did not.

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INTRODUCTION

In the present days, every individual feels the importance of educational values in their life. In the process of education, many people follow the concept of education. They think that literacy and theoretical knowledge is the only channel of education, where as, education includes the mental, physical, social, spiritual, intellectual and economical etc., dimension to the process of learning the education.

The education means the modifications in behavior. This statement peruse to the various alteration and modification which may be conducted with the help of education, environment and teaching or training. The education may only be achieved, when the various body systems engaged and involved in a co-coordinative and systematic form. The educational concept of all-round development of a human being refers to various dimensions in which the physical dimension plays an important role to provide practical shape to the education process.

Teachers play an integral role to help foster the importance of lifelong physical activity in children. Unfortunately, the opportunities for children to engage in physical activity at school are dwindling. Physical education classes and recess are being eliminated from the school day. Schools and teachers have been under increased pressure to increase student achievement.

Children are becoming more and more immobile with health concerns which include being overweight, childhood obesity, high blood pressure, depression, and other diseases and trepidations. These health concerns can linger for long periods of time, if not for a lifetime.

Health and educational professionals believe that physically active students perform better in the classroom. One study found a statistically significant relationship between fitness and academic achievement (Chomitz, Slining, McGowan, Mitchell, Dawson, & Hacker, 2009).

Promoting physical fitness and increasing opportunities for physical activity has implications to support academic achievement. Results from animal studies have shown that physical activity stimulates the neural development in the brain (Studenski, et.al., 2006).

Based on previous research with children, physical fitness can be globally related to academic achievement. Future research is deemed necessary to better determine the role physical fitness has on academic achievement.

The relationship between physical fitness and academic achievement has received much attention owing to the increasing prevalence of children who are overweight and unfit, as well as the inescapable pressure on schools to produce students who meet academic standards.

The benefits of physical fitness are widely acknowledged and extend across many domains of wellness. The association between fitness and academic achievement, however, remains to be clarified, especially in young children. Therefore, the purpose of this study was to examine the relationship between fitness and academic achievement in pre-adolescence male and female children

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Castelli, et. al. (2007) examined 259 public school students in third and fifth grades and found that field tests of physical fitness were positively related to academic achievement.

Martin and Chalmers (2008) indicated the statistically significant relationships between fitness and academic achievement, though the direction of causation is not known. Eveland-Sayers, et. al. (2009) find out a link between specific components of physical fitness and academic achievement in elementary school children. Roberts (2009) found statistically significant relationships between physical fitness and two of the three measures used for academic achievement: STAR Math Percentiles and GPA's. Physical fitness and academic achievement influence each other in ways that are still vague. Rodenroth. (2010) did not found a significant relationship between physical fitness scores based on the President's Challenge Physical Fitness Test and academic performance based on Grade Point Averages for fourth and fifth graders at the participating school. Du Toit, Pienaar & Truter (2011) found a positive relationship between physical fitness components and academic achievement was found with more significant correlations among girls than boys, as well as among older boys and girls.

METHODOLOGY

Selection of Subjects:

The present study was based upon the male and female children of 7th class belong to Krishana Public School Koni Bilaspur. Fifty (Males=25, Females= 25) subjects were selected to conduct the President's Challenge Physical Fitness Test and recording of academic achievement. The mean age of male and female subjects were 13.40 ± 0.57 and 13.28 ± 0.64 respectively studying in 7th class.

Selection of Instrument:

The student's physical fitness was assessed according to the President's Challenge Physical Fitness Test. This instrument was developed in 1953 to help promote a basic level of physical fitness for students. The President's Challenge Physical Fitness Test is a nationally recognized program and is a valid assessment tool that determines physical fitness levels.

The academic achievement was based upon the current academic year of each student in form of total mark obtain in the five subjects at 7th examinations. Average scores were calculated from current year achievement of student in English, Hindi, Mathematics, Science, and Social Studies.

Description and Administration of Test's Items:

The President's Challenge Physical Fitness test is designed to assess students based on five areas of physical fitness abdominal/core muscle strength and endurance (sit-ups), upper body strength and endurance (pull-ups), flexibility (sit and reach), agility (shuttle run), and cardiopulmonary endurance (mile run). A certified physical education teacher must administer and conduct the tests. The tests that the physical education teacher assessed, and the ones the researcher used for the study were sit-ups, shuttle run, one-mile run, pull-ups, and the sit and reach. The reason these fitness tests were used is because these are among the most common physical fitness tests for the identified areas of physical fitness

RESULTS AND DISCUSSION

To find out the relationship between academic achievement and five physical fitness components of adolescence male and female children means, and standard deviations were computed. The Pearson's Product Moment Correlation coefficients were calculated to reach at the final result of the study. The results were also compared with the adequate significant value at .05 level of confidence. and data pertaining to this have been presented in Table 1 to 2.

TABLE 1

DESCRIPTIVE STATISTICS OF VARIOUS COMPONENTS OF PHYSICAL FITNESS, AGE, HEIGHT, WEIGHT AND BMI OF MALE AND FEMALE CHILDREN

S.NO.	Test variables	Male(N=50)		Female (N=50)	
		Mean	SD	Mean	SD
1	Sit-ups	14.07	6.59	14.08	5.31
2	Pull-ups	2.14	1.18	01.16	0.80
3	Sit and Reach	25.89	4.43	25.60	4.00
4	Shuttle run	31.64	6.15	32.40	4.55
5	1Mile Run	11.99	1.79	13.18	1.68

The mean scores of various components of physical fitness of male and female children belong to Krishana Public School, Koni, Bilaspur (CG) have been depicted in figures 1 to 9.

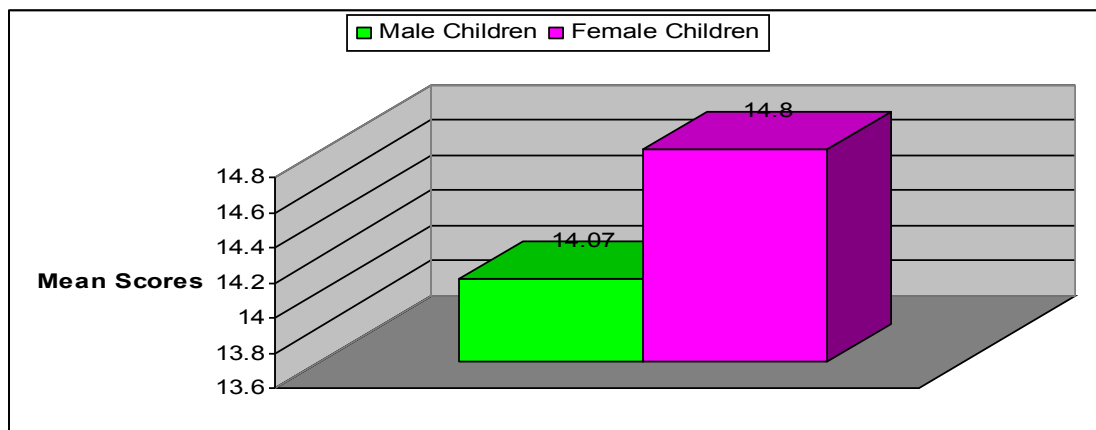


Figure 1: Mean Scores of Sit-ups (abdominal strength) of Male and Female students.

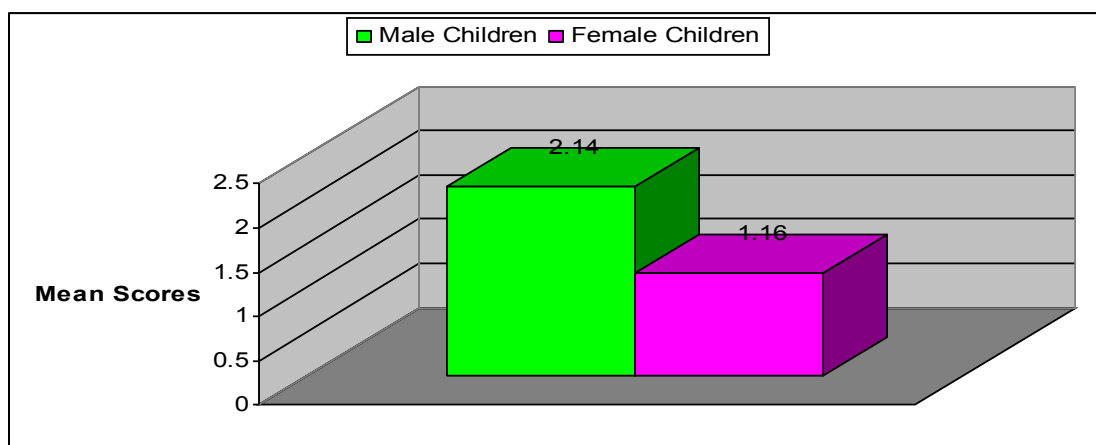


Figure 2: Mean Scores of Pull-ups (Shoulder strength) of Male and Female students.

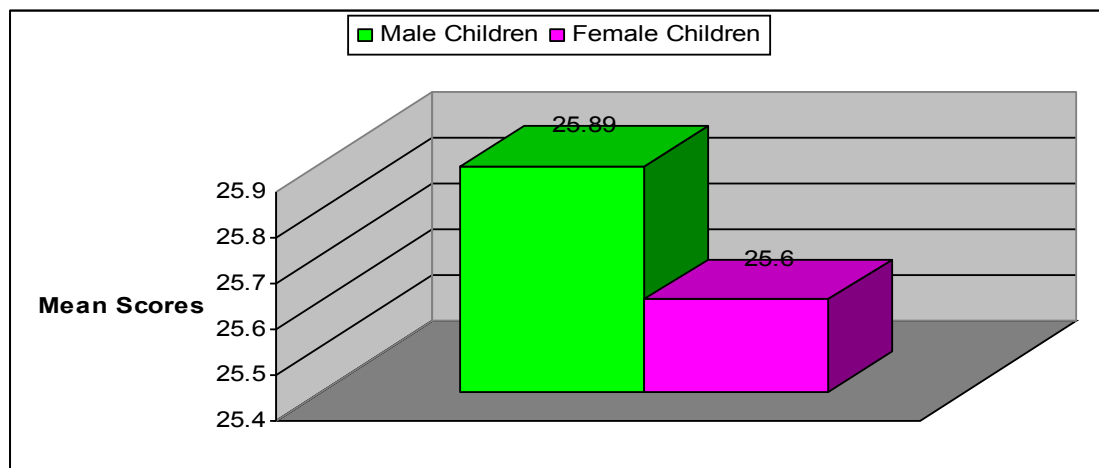


Figure 3: Mean Scores of Sit and Reach (Flexibility) of Male and Female students.

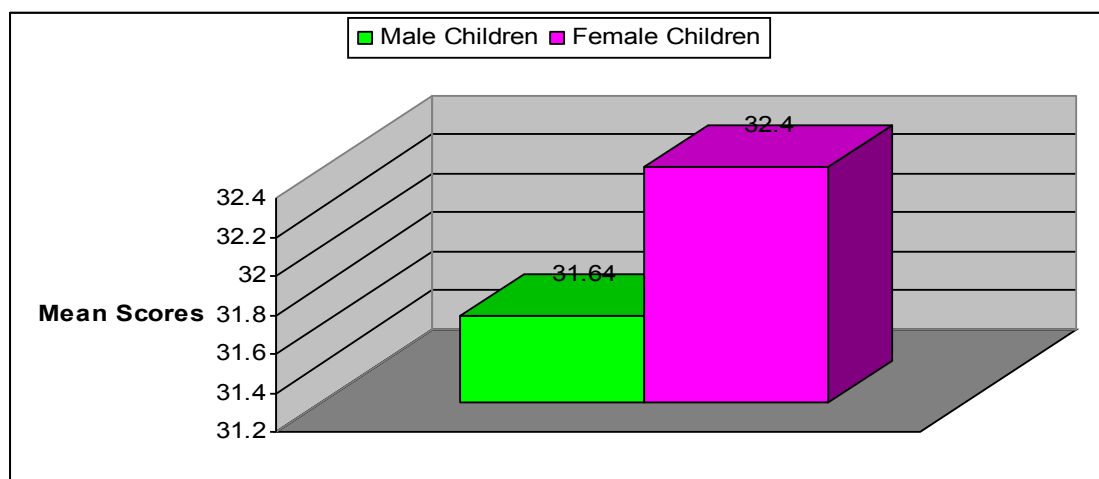


Figure 4: Mean Scores of Shuttle Run (Agility) of Male and Female students.

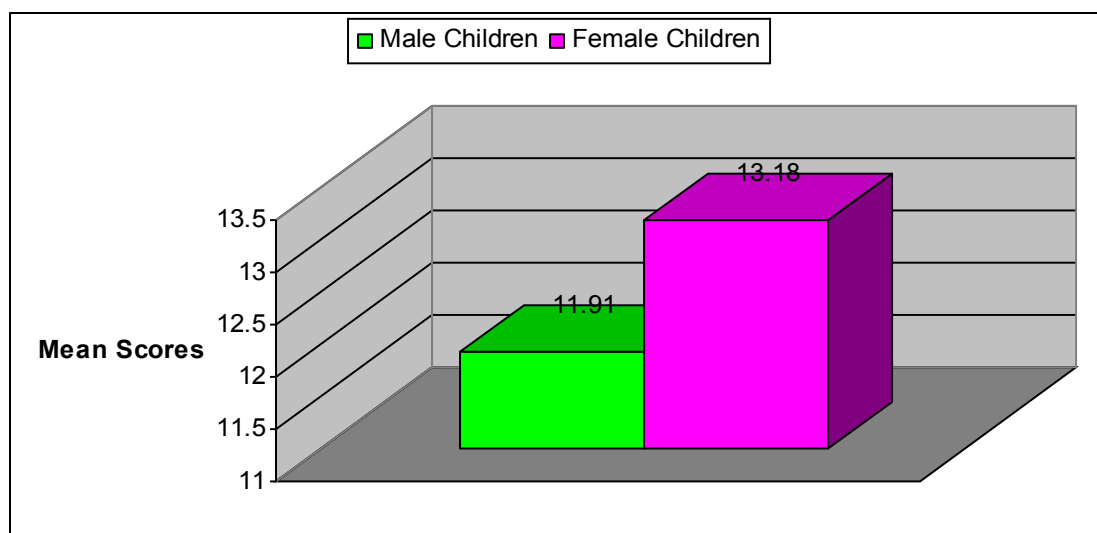


Figure 5: Mean Scores of 1 Mile Run (Endurance) of Male and Female students

TABLE 2

RELATIONSHIP BETWEEN ACADEMIC ACHIEVEMENT AND PHYSICAL FITNESS COMPONENTS OF AMONG MALE AND FEMALE CHILDREN

S.N0.	Variables Correlated	Males	Females
1.	Academic Achievement V/S Sit-up	-.127	-.187
2.	Academic Achievement V/S Pull-ups	-.409*	.177
3.	Academic Achievement V/S Sit & Reach	-.494*	-.134
4.	Academic Achievement V/S Shuttle run	.010	-.198
5.	Academic Achievement V/S 1 Mile run	-.181	.130

*Significant at .05 level, $r_{.05}(48) = .279$

Table 2 shows that there is statistically significant correlation existed between academic achievement - Pull-ups followed by Sit and reach components of physical fitness among male children, as the Pearson's Product Moment Correlations ('r') of -.409, and -.494, respectively were higher than the required value to be significant. But significant correlation did not existed between academic achievement- Sit-ups followed by shuttle run and 1 Mile run components of physical fitness among female children, as the Pearson's Product Moment Correlations ('r') of -.127, .010 and -.181 respectively were found lesser than the required value of $r_{.05}(48) = .279$.

In case of Female, significant correlations was not found between academic achievement - Sit-ups followed by Pull-ups, Sit and reach (abdominal strength) shuttle run and 1 Mile run components of physical fitness among female children, as the Pearson's Product Moment Correlations ('r') of -.187, .177, -.134, -.198 and .130 respectively were less than the required value of $r_{.05}(48) = .279$.

DISCUSSION

Findings of the descriptive data of pre-adolescence male and female student on various physical fitness components indicated that male students were found to have more upper-body strength and flexibility than their counter parts. In case of female students, they were found to have more amount of strength and endurance of abdominal muscles, speed and agility and cardio-pulmonary endurance in comparison of male respondents.

When the relationship established between five components of physical fitness and academic achievement among pre-adolescence male and female children, significant correlations were found between academic achievement- pull-ups (Upper body strength and endurance) followed by flexibility among male respondents. But, they did not have significant correlation between academic achievement -sit-ups followed by shuttle run and 1mile run physical fitness scores based on the President's Challenge Physical Fitness Test. But the results of this study provided varying correlations between physical fitness and academic achievement among male students,

In case of female children, there was no significant correlation between academic achievement based on Grade Point Averages and physical fitness scores based on the President's Challenge Physical Fitness Test.

The results of this study differ from other studies that involved physical fitness and academic achievement, in that numerous studies have found a significant correlation between physical fitness and academic achievement, and this research study did not in case of female children.

CONCLUSIONS

1. Female students, they were found to have more amount of strength and endurance of abdominal muscles, speed and agility, and cardio-pulmonary

- endurance in comparison of male respondents.
2. Male students were found to have more amount of upper body strength endurance and flexibility in comparison of female respondents.
3. Female children did not have any significant correlation between academic achievement and all components of Physical fitness.
4. Male children were found to have significant correlation between academic achievement and two components of physical fitness i.e. pull-ups and sit and reach test.
5. Results of this study provided varying correlations between physical fitness and academic achievement among male and students.

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