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Motor Fitness of Rural Primary School Girls In Comparison To Boys

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Abstract: *Difference between male and female in physical, physiological, motor, psychological, social and emotional dimensions have been confirmed by many researchers time to time (Tanner:1978; Overman & Williams, 2004; Linda, 2005). The causes have been identified as genetic, social and cultural. But, it has also been reported that sex difference does not become prominent before puberty (Gustafsson & Lindenfors, 2008). The purpose of the study was to compare motor fitness status of boys and girls belonging to primary school at a rural setting. 118 boys and girls (9-10 years) were selected as subjects from Bardhaman district, West Bengal. Speed, Cardio-respiratory Endurance, Muscular Strength-Endurance, Flexibility, Agility, Coordination and Anaerobic Power were chosen motor fitness variables for the study. Results of the present study revealed that in speed, coordination, power and agility no significant difference exists ($p<0.05$) between the boy and girl students of 9-10 year age. However, in flexibility, cardio- respiratory endurance & muscular strength-endurance significant difference exist ($p>0.05$) between the groups. In cardio-respiratory endurance, boys were better than the girls while girls had higher scores than boys in flexibility and abdominal muscular strength-endurance.*

Keywords: *Motor fitness, primary level, sex difference.*

I. Introduction

Keeping in view the fact that childhood physical fitness has important health consequences during adulthood, a large number of studies on physical fitness have been reported from different countries of the world. The general knowledge is that the boys are superior to girls. It is also known that the girls appear to be better in performance than boys in pre-adolescent period (Sallis et al., 1992). It is also established that sex difference does not become prominent by the age of 9-10 years. With all these available knowledge, the present study was conducted to investigate the status of motor fitness of rural primary school boys and girls and compare the same between two sexes. It was hypothesized that there would be no significant sex difference in performance of motor fitness tests.

II. Materials and Methods:

Subject: A number of one hundred and eighteen subjects (N=118; boys=59, girls=59) were chosen for this study, fifty nine for each group. The age of the children ranged between 9 and 10 years and the study area was Bardhaman district, West Bengal. The sampling technique was random and a static group design was adopted to the study.

Criterion Measures: The parameters chosen for the study were speed, cardio respiratory endurance, muscular strength-endurance, flexibility, agility, coordination and anaerobic power measured by 50mts dash test in $1/10^{th}$ of second, 600mts Run & Walk test by meters, 30-sec.Sit-up test in numbers, Sit and Reach test in inches, Shuttle run test in seconds, Alternate Head Wall Toss test in numbers, and Standing Broad Jump test in meters respectively. Standard tests and measurement procedures were used in this study.

Analytical Techniques: To compare the mean differences of motor fitness components between boys and girls mean, standard deviation (SD) and independent t-test were computed using SPSS Software version 17. The level of confidence was set at 0.05.

III. Findings and Results:

The personal data of subjects is presented in Table 1 to ascertain the homogeneity of groups.

Table 1: Personal Data of Boys & Girls

Variables	Mean ± SD	
	Boys	Girls
Age (Year)	10.5 ± 0.25	10.5 ± 0.23
Height (cm)	135.31 ± 6.58	136.71 ± 7.79

Weight (Kg)	25.26 ± 4.58	26.87 ± 6.16

The findings pertaining to mean; standard deviation and mean difference between boys and girls on the selected motor fitness components has been presented in table 2.

Table 2: Mean Difference of selected Components Between Two Groups

Variables	**(Mean ± SD)**		**Mean Diff.**	**t-Value**	**Table Value**
	Boys	**Girls**			
Speed (sec)	9.35 ± 0.97	9.46 ± 0.88	0.11	0.64	1.98
Cardio Respiratory Endurance (min)	2.76 ± 0.51	3.24 ± 1.31	0.47	**2.60****	
Abdominal Muscular Strength Endurance (no)	10.02 ± 4.43	13.71 ± 6.65	3.69	**3.55*****	
Flexibility (inch)	7.85 ± 2.18	10.14 ± 2.43	2.29	**5.38*****	
Agility (sec)	12.46 ± 0.72	12.49 ± 0.70	0.03	0.25	
Co-ordination (no)	18.27 ± 5.88	16.63 ± 7.49	1.64	1.33	
Anaerobic Power (mts)	1.35 ± 0.23	1.39 ± 0.24	0.04	0.87	

***Significant at 0.05 levels**
**** Lower the score, better the performance**
*****Higher the score, better the performance**

Table 2 shows that the mean value of selected motor fitness components namely Speed, Cardio-Respiratory Endurance, Muscular Strength Endurance, Flexibility, Agility, Coordination and Anaerobic Power of boys and girls were 9.35 ± 0.97 sec & 9.46 ± 0.88 sec; 2.76 ± 0.51 min & 3.24 ± 1.31 min; 10.02 ± 4.43 times & 13.71 ± 6.65 times; 7.85 ± 2.18 inch &10.14 ± 2.43inch; 12.46 ± 0.72 sec & 12.49 ± 0.70 sec; 18.27 ± 5.88 times &16.63 ± 7.49; 1.35 ± 0.23 mts &1.39 ± 0.24 mt respectively.
It was also evident that there were significant difference between boys and girls on Cardio Respiratory Endurance, Muscular Strength Endurance and Flexibility and insignificant difference on Speed, Agility, Coordination and Anaerobic Power.

The graphical representation of selected physical fitness components of boys and girls has been presented in figures 1; 2; 3; 4 & 5 respectively.

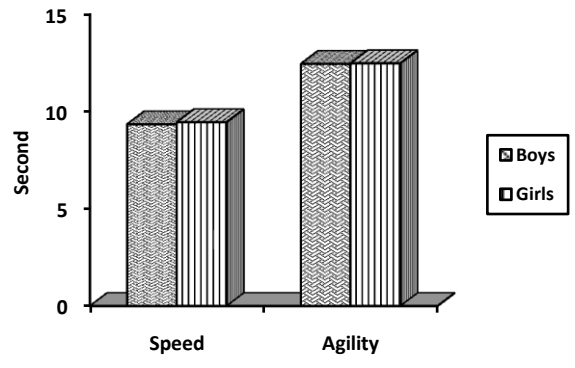

Figure 1: Speed & Agility of the Subjects

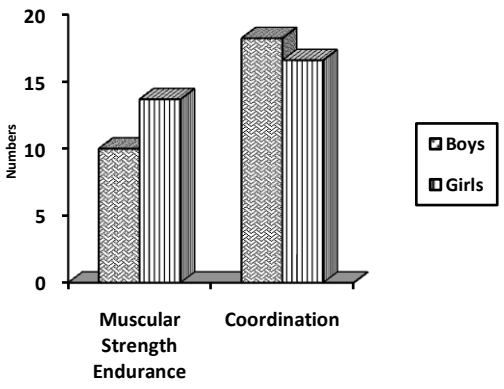

Figure 2: Muscular Strength Endurance & Coordination of the Subjects

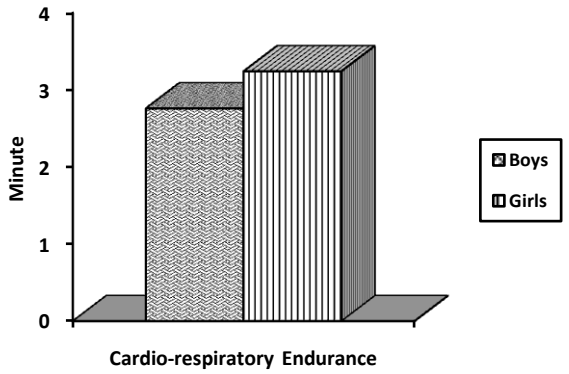

Figure 3: Cardio-respiratory Endurance of the Subjects

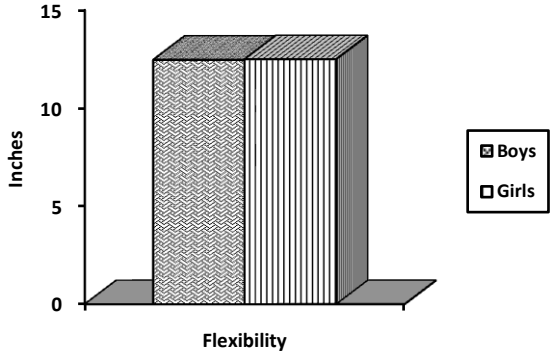

Figure 4: Flexibility of the Subjects

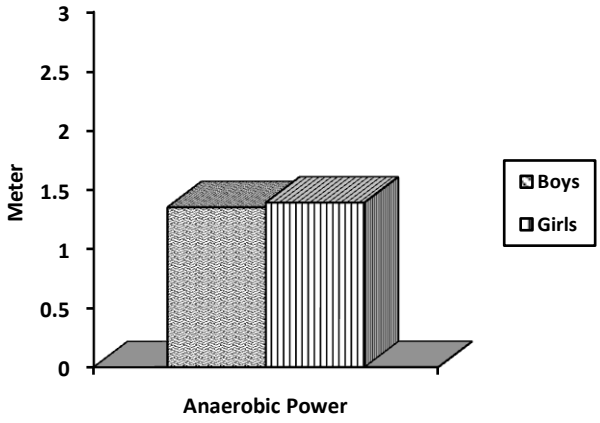

Figure 5: Anaerobic Power of the Subjects

IV. Discussion:

The results of the present study indicated that in Cardio-respiratory endurance, the boys were significantly better performers than the girls. This might be due to the reason that girl children are least engaged in enduring activities at home or in school and also least prone to run spontaneously. However, the boys are exposed to play enduring games like football from childhood in Bengal. However, the girls showed superiority in abdominal muscular strength-endurance and flexibility in this study might be due to their life-style activities in rural set up and bent towards limited games in school.

In Speed, Agility, Coordination and Anaerobic Power there were no significant difference found between the primary school boys and girls ranging the age 9-10 years in present study. This might be due to the reason of the life style activities and at the same time opportunities of exposure of girls in school set-up through participation in small area Physical Education programmes along with boys.

The results of this study corroborate with Thomas, Jerry R. (1985) who worked on running speed of elementary school children and concluded that the boys and girls were similar in running speed at ages 6 and 7. Robson and Uppal (1981) also observed that in standing broad jump and agility there was no significant difference in performance between boys and girls.

However, the result of this study is in controversy with Gallahue (1982) who reported from Frederick (1977) that boys out-performed the girls in standing long jump at all age levels. The study of Keogh (1965) also reported that there were some differences between boys and girls in the performance of standing long jump between 6 and 12 years. According to Jensen and Fisher (1979) girls were slightly more agile than boys during the years before puberty.

Again in flexibility and muscular strength-endurance, present study observed that the girls were significantly better than the boys. This was in agreement with the studies of Jensen and Fisher (1979) who

observed that elementary school girls were more flexible than boys. Besides, Hall (1956), Hoffman (1955), Phillips et al. (1955), and Smith (1956) concluded that girls were generally more flexible than boys. Gallahue (1982) reported from the study of Di Nucci (1976) that girls performed better than boys on five different measures of flexibility at all ages including childhood and adolescence. Gallahue (1982) reported from AAHPERD and CAHPER test that boys and girls performed in the bent knee sit-up test at nearly same level until age 8, when boys began to show superiority until the prepubescent years of 11 and 12.

V. Conclusion:

On the basis of findings of the present study it may be concluded that by the end of childhood at the age of 9-10 years

i) The fitness level in both sexes is component specific.
ii) Boys have higher cardio-respiratory endurance while girls have better flexibility and abdominal muscular strength-endurance.
iii) Speed, coordination, power and agility of rural boys and girls are same.

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