

## A COMPARATIVE STUDY ON ANTHROPOMETRIC PROFILE AND MOTOR PERFORMANCE OF COLLEGE MALES AND FEMALES

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### ABSTRACT

*College is a time of great change for young adults. Newly found independence allows the college student to make decisions and choices that were often previously made for him or her. One of the most important decisions a college student may make is how to incorporate physical activity (PA) into a busy lifestyle. Human motor performance and motor skills are essential aspects of various daily activities, and their importance is especially great in traffic, sports and unexpected situations. The purpose of this study is to investigate and evaluate the level of motor performance among college students of V.S. Mahavidyalaya, West Bengal based on gender. A total 120 students who has been involved in this comparative study from which 60 were male students (mean  $\pm$  SD; Age:  $20 \pm 1.41$  yrs, Height:  $1.60 \pm .08$  mt, Weight:  $54.16 \pm 5.17$ kg) and the other 200 are female students (mean  $\pm$  SD; Age:  $19.95 \pm 1.34$  yrs, Height:  $1.51 \pm .02$  mt, Weight:  $48.4 \pm 3.98$  kg). There were four motor performance variables in this test which were 50 mt dash, Right Boomerang run, Vertical jump and Multi stage running test. All these tests were evaluated the level of fitness from aspect speed, agility, power and aerobic power. Based on the result it was concluded that motor performance was better in male students but not in all cases like power and aerobic power.*

**Key Words:** Motor Performance, College Males, Anthropometric

### **Introduction**

College is a time of great change for young adults. Newly found independence allows the college student to make decisions and choices that were often previously made for him or her. One of the most important decisions a college student may make is how to incorporate physical activity (PA) into a busy lifestyle. Overall, sedentary behavior is perceived to have increased in the past decade, in large part due to increased computer and internet usage (Matthews CE, 2008;

Troiano RP, 2008) and this may be heavily influenced in college students by the recent popularity of social networking sites such as Facebook and Twitter. Prior estimates of computer usage by college students are limited and range widely from 2.8 hours per week (US Dept of Labor, 2009) to 11.6 hours per week (Anderson KJ,2001), it appears that a significant amount of college students' leisure time is spent on screen time sedentary behaviors which may affect the general motor ability. Human motor performance and motor skills are essential aspects of various daily activities, and their importance is especially great in traffic, sports and unexpected situations. There is evidence that physically active subjects have better performance in some motor tasks (e.g. reaction time) than less active ones, and a few longitudinal intervention studies have shown that training improves certain aspects of motor performance.( **Kauranen**, 1999). Now days maximum studies address the characteristics regarding physical and physiological capacity of young college students. This study attempts experimentation whether, and if so, how much the sedentary habits college-aged males and females students differs to teach other in anthropometric and motor performance.

## **Methods**

### **Subjects**

The sample numbered 120 male & female students of V.S. Mahavidyalaya at Paschim Medinipur, West Bengal, India, and aged 18 to 21. The subjects selected for the study were never exposed to any organized and systematic training sessions of any exercise and sport.

### **Variables**

For the evaluation of motor performance the chosen variables were Speed, Agility, Power and aerobic power. For the collection of data the following tests were used: Speed was measured by 50 meter dash, agility was measured by right boomerang run, power was measured by vertical jump and aerobic power was estimated by the multi stage running test. To observe body composition changes the body mass index was calculated and for that anthropometric measuring were carried out using standard Stadiometer and weighing machine.

### **Data analysis**

The basic statistical parameters were calculated for all the data: the mean, standard deviation. To determine the differences, if any, between the male and female, the independent t-test was calculated. The data was processed by means of the MS Excel Data Analysis tool pack.

### **Findings and Results**

Anthropometric and motor characteristics of the male and female students according to the study Variables are shown in tables 1-2.

**Table: 1**  
**The basic descriptive statistics and the statistical significance of the difference in the means of the applied variables of males and female group.**

Variables	Male	Female	't'
<b>Age</b>	20± 1.41	19.95± 1.34	0.616
<b>Height</b>	1.60±.08	1.51±.02	1.69
<b>Weight</b>	54.16±5.17	48.4±3.98	3.22
<b>BMI</b>	21.29±2.67	21.02±1.76	0.53

**\*Significant at 0.05 levels**

It appears from the table-7 that the computed t-value (3.22) in relation to weight was greater than the tabulated p value (2.00), at 0.05 levels. The results of the study indicated that there was a significant difference between male and female when compared to their weight. This is due to females, on average, having fewer total muscle mass than males. Females also have lower muscle mass in comparison to total body weight. However no significant difference was found in case of age, height and BMI.

The data on motor performance of male and female students have been analyzed by descriptive statistics and independent 't' - test and the results are presented in table-2

**Table 2**  
**The Mean, SD and Significant Difference of Motor Performance variables of the Male and Female Group**

Variables	Male	Female	't'
<b>Speed</b>	7.17±0.71	8.01±0.55	<b>2.24*</b>
<b>Agility</b>	12.77±1.67	14.27±0.52	<b>9.21*</b>
<b>Power</b>	27.25±8.08	23.31±7.63	<b>0.052</b>
<b>Aerobic Power</b>	34.57 ±6.72	25.42 ±3.64	<b>1.17</b>

**\*Significant at 0.05 level**

In **Table 2**, the comparison of mean of the two groups indicated that the mean of motor performances of the Male Group was higher than that of the Female Group. It was apparent observation that the motor performances level was lower in females than their male counterparts.

The above table also presents the computed **t- value** comparing the motor performance level of the male and female college students and shows that significant difference exists between the group when compared with speed ( $p=2.24<0.05$  level), agility ( $p=9.21<0.05$  level). When compared to the mean values of both the groups, finally it has been found that male students have performed significantly better on speed and agility than their counterparts. However, no significant differences have been observed on the other variables; power, aerobic power.

The reason for the male dominant result may be identified as genetic, social and cultural. On average, males are stronger than females. This is due to females, on average, having fewer muscle mass than males. Females also have lower muscle mass in comparison to total body weight. Gross measures of upper body strength suggest an average 40-50 % difference between the sexes, compared to a 30 % difference in lower body strength. Males remain stronger than females, when adjusting for differences in total body weight. This is due to the higher male muscle-mass to body-weight ratio (Maughan, R. J., Watson, J.S. and J Weir, 1983).

This result is supported by the findings of many researchers Morteza JOURKESH (2011); Tanner (1978); Overman & Williams (2004); Linda (2005); Gustafsson & Lindenfors, (2008). Another researcher Jensen and Fisher (1979) reported that there was a definite and significant difference in aerobic capacity between men and women by 15% to 25%. Regarding sex differences Teichner (1954) and Tripp (1965) agreed that men could react slightly faster than women. They also agreed that reactions in limb movement, women were slower than men.

### **Conclusion**

Within the limitation of the study it may be concluded that female students have a lower levels of fitness as compared with male students. In addition, speed and agility was better in male students, except for power and aerobic power, in which female statistically no significant difference was found. Future research needs to examine methods for increasing motor performance levels among this population group.

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