



COMPARISON OF SELECTED ANTROPOMETRIC VARIABLES BETWEEN URBAN AND RURAL SCHOOL GOING GIRLS

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ABSTRACT

The purpose of this study was to compare selected Anthropometric variables between Urban and Rural school going girls. For achieving the purpose of the study, data was collected on total 80 school going girls (Urban girls –40 and rural girls–40) from Patiala. The study was conducted on only 11th and 12th standards school going girls. Anthropometric variables were Height and Weight of the subjects. The hypothesis stated that there will be significant difference of selected anthropometric variables between Urban and rural school going girls. To compare Anthropometric variables between Urban and Rural school going girls mean, standard deviation and independent t–test were employed. The level of significance was set at 0.05. The result showed that there was significant difference in Height and insignificant difference in Weight between Urban and Rural school going girls.

Key Words: Height, Weight, Anthropometric variables, weighing machine, Urban and Rural.

1. INTRODUCTION

Anthropometry, measurement of body structure is the oldest type of body measurement known dated back to the beginning of recorded history. Sulpiastri investigated the outline of the body by dividing it into 480 parts. The ancient Egyptians also used a rough sort of Anthropometry during the period from the thirty fifth to twenty second Century B.C. “Anthropometry, measurement of the biological oneness of mankind is far more significant than the relatively superficial

differences". Anthropometric measurements have been a part of physical education since its inception in this country. The two Greek words 'Anthropic' and 'Metrien' give birth to a new term 'Anthropometry'. Anthropic means 'Man' and 'Metrien' means to measure. Therefore when we speak literally Anthropometry is the measurement of the body to discover its exact dimensions and the proportions of its parts. Anthropometric measurement consists of objective measurement of structure and of functions of the body. The measurement of structures includes such items as Weight, total Height designed a comparative study of in a public school system in Brazil and America during 1982 school year. Health related physical fitness test battery and athletic ability tests were administered. The height and weight of the subjects were also undertaken that height and weight increased at approximately same rate and girls were significantly tall and heavier than boys during adolescence. American girls and boys were taller and heavier than Brazilian boys and girls. **Brabant and Jose (1983)**

The primary objective was to compare growth and body composition in an infantile rural population by means of the upper arm muscle area by height and other anthropometric measurements. Research was carried out by way of a cross sectional study, including 80% (321 6-13 year olds) of the schoolchildren living in General Lavalle, a rural community of about 3000 inhabitants. The methods and procedures included the evaluation of mother's educational levels and anthropometric measurements. Height (H), weight, mid upper arm circumference, and triceps skinfold (TS) were measured. The body mass index (BMI), the upper arm muscle area (UAMA), the upper arm fat area (UAFA) and the upper arm muscle area by height (UAMAH) were calculated. Variables were grouped by gender and age and transformed into z-scores, using the US anthropometric standards as reference. The results showed that: (1) the mother educational status was, in relation to z-scores, as in an urban population, and (2) the z-scores for BMI, UAFA and TS were above the reference, while the ones for H, UAMA and UAMAH were below the reference. The differences between z-scores in relation to mother's educational levels were statistically significant ($p < 0.05$). UAMA was correlated strongly with H ($r = 0.67$). The children of General Lavalle tend to be fatty and overweight, while their muscle mass and H are proportionally low, but with values within the reference. Thus, low muscle mass and Hare, in general terms, indicative of low protein reserves, the systematically low-anthropometry found for UAMAH suggests that this index should be used

in conjunction with other indexes (e.g. BMI, UAFA) to obtain a more complete assessment of body composition and nutritional status.**Bolzan A, Guimarey L and Frisancho A R. (1900)**

Anthropometric indices have been studied in 952 newborns. It has been shown those children with middle mass and height indices in birth have the most expressed homeostatic resources. Children with low body mass in birth are characterized by the decreasing of resistance and high morbidity. Phenotype B, incompatibility with mother according to ABO, Rhesus systems are the risk factors of complicated neonatal period course that results from the disturbances in balance of regulatory lymphocyte subpopulations.**Kobets TV and Usachenko IE(2001)**

Singh Parminder (2014), conducted study to investigate the Health related fitness of Rural and Urban girls. The subjects were selected from various Rural and Urban Schools of Punjab (fifty girls from Rural and fifty girls from Urban schools). The age of both groups was ranging between 13 -17 years. The data was collected by test method. The data for the study on health related fitness were collected through three health related fitness components. Two components of AAHPER youth physical fitness test that is 50 yards dash for speed and 600 yards run/ walk for cardio-respiratory endurance and one component from Roger's strength test that is push up test for strength were taken. The total sample was constituted of 100 hundred girls of Rural and Urban schools of Punjab. For the purpose of this study the entire sample was divided into two groups. One group consist of 50 girls from rural schools and 50 girls from Urban schools. All the three tests were administered on all the four groups and the data was gathered. In order to examine the hypothesis of present study mean, standard deviation and standard error deviation were employed for speed, strength and endurance tests scores. Where 't' test was found significant to find out the differences among the mean of different groups. The result were examined at 0.05 level of confidence (98, 47 degree of freedom)

Raja K. et al. (2014) said that Childhood fitness is an emerging area of concern as prevalence of childhood obesity is rising. Indian studies, have identified decreased fitness levels and increased obesity in urban children. However, studies incorporating a comprehensive fitness evaluation are unavailable. In order to establish appropriate school fitness programs, baseline fitness levels in the target children is essential. **Aims:** The aim of this study is to evaluate health and performance related fitness levels of school going children between the ages of 8 and 14 years old. **Settings and Design:** Schools from Udupi Taluk, observational design. **Materials**

and Methods: Fitness testing battery adapted from Presidential fitness challenge. **Statistical Analysis Used:** Descriptive statistics, parametric tests of comparison, and correlation were carried out using Pearson's correlation coefficient. **Results:** Children were divided into age groups consisting of 1 year age intervals. Reference values are guidelines given by President's challenge. Children who scored 25-32 points were considered as very fit; 17-24 as being adequately fit and 8-16 as unfit. Children from vernacular schools were more fit than those from English medium schools, with boys doing better ($P = 0.01$). **Conclusions:** From the results of this study, we can conclude that basic levels of health-related fitness are low among school children of Udupi Taluk, Karnataka.

2. METHODS

2.1. Subjects

Total 80 school going girls (40 from Urban area and 40 from rural area) from Patiala, age ranging from 16 to 18 years were randomly selected from different schools of Patiala, Punjab India.

2.2. Hypothesis

It was hypothesized that there would be significant difference of selected anthropometric variables between Urban and rural school going girls.

2.3. Criterion Measures

The following tests were selected and their scores were considered as criterion measures for this study: -

- Height was measured by anthropometric rod was recorded in centimeters.
- Weight was measured by weighing machine was recorded in kilogram.

2.4. Instruments Used

In present study researcher has used the following instruments given below:

1. Anthropometric Rod
2. Weighing Machine

2.5. Statistical Analysis

In this study, SPSS was used to analyze the data. Anunpaired sample t-test was used to compare height and weight between rural and urban school going girls. The data collected on selected

anthropometric variables was analyzed by independent “t” test. The level of significance for testing the hypothesis was set at 0.05 level of significance ($p < 0.05$).

3. Findings

The Mean \pm SD values and t-value of the selected anthropometric variables of rural and urban school going girls are given in Table 1 and 2.

Height

Table 1
SIGNIFICANT DIFFERENCE OF THE MEAN OF HEIGHT OF URBAN AND RURAL SCHOOL GOING GIRLS

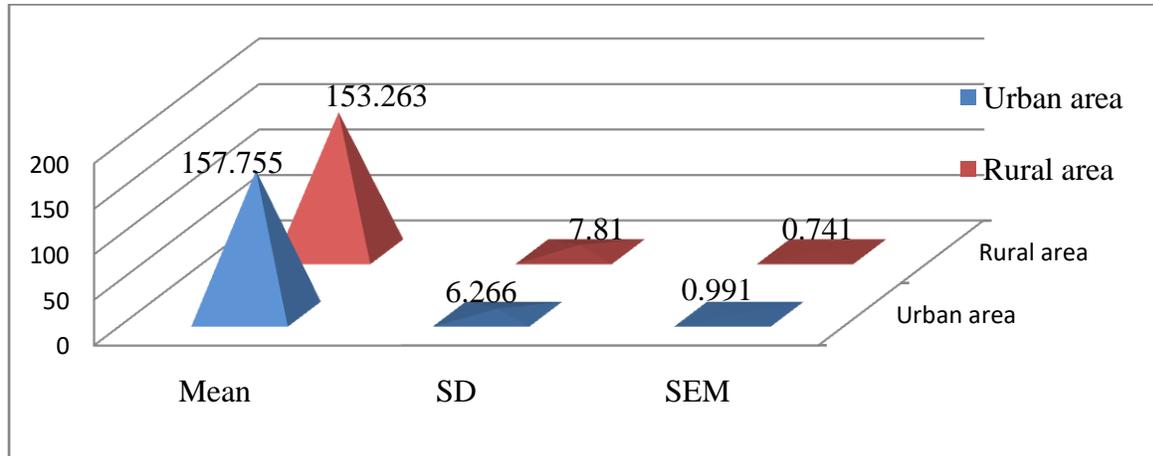
Group	N	Mean	Standard deviation	Standard error mean	t-value
Urban area	40	157.755	6.266	0.991	3.1364*
Rural area	40	153.263	4.686	0.741	

$t_{.05 (78)} = 1.99$

The table & figure 1 shows that the mean and standard deviation values with regard to urban school going girls on variables Height were recorded as 157.755 and 6.266 respectively whereas in case of rural school going girls the same were recorded as 153.263 and 4.686 respectively. There were significant differences between urban and rural school going in the variables of Height, where urban students were taller than rural school going girls at .05 levels.

FIGURE NO.-1

MEAN AND STANDARD DEVIATION OF HEIGHT OF URBAN AND RURAL SCHOOL GOING GIRLS



Weight

Table 2

SIGNIFICANT DIFFERENCE OF THE MEAN OF OF WEIGHT OF URBAN AND RURAL SCHOOL GOING GIRLS

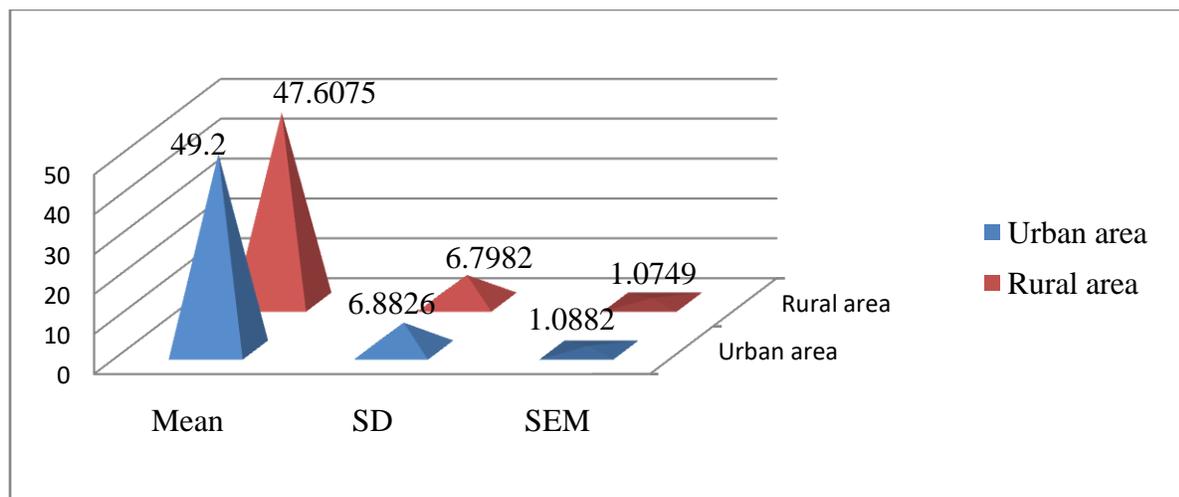
Group	N	Mean	Standard deviation	Standard error mean	t-value
Urban area	40	49.2000	6.8826	1.0882	1.0411
Rural area	40	47.6075	6.7982	1.0749	

$t_{.05 (78)} = 1.99$

The table-2& figure 2 shows that the mean and standard deviation values with regard to urban school going girls on variables Weight were recorded as 49.2000 and 6.8826 respectively whereas in case of rural school going girls the same were recorded as 47.6075 and 6.7982 respectively. There were insignificant difference was found between urban and rural school going girls in the variables of Weight, where urban school going girls were heavier than rural school going girls at .05 level.

FIGURE NO.-2

MEAN AND STANDARD DEVIATION OF WEIGHT LEVEL OF URBAN AND RURAL SCHOOL GOING GIRLS



4. Discussion of Findings

The analysis of data revealed that significant difference was found between urban and rural school going girls on the variable height and insignificant differences was found between urban and rural school going girls on the variable weight. It may be due to the socio-cultural environment of urban school going girls, their diet pattern, fitness level etc.

5. Discussion of Hypothesis

In the light of findings of the study, the hypothesis that there would be significant difference of selected anthropometric variables between Urban and rural school going girls was partially accepted.

6. Conclusions

1. The results powerfully prove that, significant differences were observed between urban and rural school going girls for their Height. Urban school going girls were taller than rural girls.
2. The results strongly confirm that, insignificant differences were observed between urban and rural school going girls for their Weight.

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