

# Comparative Study of Anthropometric Measurements between Rural and Urban Girls of Madhya Pradesh

Savsingh Chouhan<sup>1\*</sup> Dr. Sudhira Chandel<sup>2</sup>

<sup>1</sup> Research Scholar, School of Physical Education, DAVV, Indore

<sup>2</sup> Professor, School of Physical Education, DAVV, Indore

**Abstract – Background:** Health is men's greatest wealth, he who has health must cherish it with care, least he should lost it. To this end he must have adequate knowledge of how to live health. **Objectives of the study:** 1) To characterize the anthropometric measurements of rural and urban girls of Madhya Pradesh .2) the second objective of the study was to compare anthropometric measurements of rural and urban girls of Madhya Pradesh. **Materials and Methods:** Randomly selected 500 rural and 500 urban girls of Madhya Pradesh and Age group of the subject 13 to 18 years. **Conclusions:** Significant difference was found between Urban and Rural Girls of Madhya Pradesh in relation to Triceps Skin Fold Width. Insignificant difference was found between Urban and Rural Girls of Madhya Pradesh in relation to Body Weight, Stature Height, Elbow Width (Diameter), Knee Width,(Diameter), Upper - Arm Circumference, Fore - Arm Circumference, Thigh Circumference, Calf Circumference, Biceps Skin fold Width, Thigh Skin fold width, Calf Skin fold width.

**Keywords:- Anthropometric measurements, Rural Girls and Urban Girls**

-----X-----

## INTRODUCTION

Anthropometric Measurement was central concerns of the First Phase of the scientific era of measurement, which began in the 1860's. Current interest in anthropometrics measurement focuses on three areas, growth, and body type and body composition.

The anthropometrics examination is a supplement, and not a substitute for the medical examination it may, however and frequently does. Indicate physical disorder that is not sufficiently advanced to be detected as a specific pathological state by the physicians. Trained administrator in determining appropriate medical follow-ups can administrate the anthropometrics measurement.

Anthropometrics measurements have contributed to knowledge in physical and health education in relation to body build physical growth.

## OBJECTIVES OF THE STUDY:

1. To characterize the Anthropometric Measurements status of rural and urban girls of Madhya Pradesh.

2. Second objective of the study was to compare Anthropometric Measurement status of rural and urban girls of Madhya Pradesh.

## MATERIAL AND METHODS

In order to assess Anthropometric Measurements conduct randomly selected 500 rural and 500 urban girls of Madhya Pradesh. The age range of the subjects was between 13-18 years. The criterion measure of the study was the score obtained from the Anthropometric Measurements.

**Dr. Devinder K. Kansal, (Test and Measurement in Sports and Physical Education)** the following Anthropometric variables selected for the study.

### General Body Measurement:

1. Body Weight.
2. Stature Height.
3. Elbow Width. (Diameter)
4. Knee Width. (Diameter)

5. Upper - Arm Circumference.
6. Fore - Arm Circumference.
7. Thigh Circumference.
8. Calf Circumference.
9. Biceps Skin fold Width.
10. Triceps Skin fold width.
11. Thigh Skin fold width.
12. Calf Skin fold width.

**RESULTS AND DISCUSSION:**

To determine the significance difference of rural and urban girls of Madhya Pradesh, descriptive statistics was used. The level of significance to check the *t*-value was set at 0.05 level that was considered appropriate for the purpose of the study To compare Anthropometric Measurements of rural and urban girls of Madhya Pradesh T-test was used.

The comparison of Anthropometric Measurements of 500 urban and 500 rural girls have been presented by T-Test in table 1.

**Table – 1**

**Comparison of Anthropometric Measurements between Urban and Rural Girls of Madhya Pradesh**

Variable	Category	N	Mean	MD	df	T
Body weight	Urban	500	52.52	-.00400	998	.014
	Rural	500	52.51			
Height	Urban	500	156.99	-.33800	998	1.15
	Rural	500	157.33			
Elbow Width	Urban	500	6.06	-.06118	998	1.684
	Rural	500	6.12			
Knee Width	Urban	500	7.47	-.05798	998	1.240
	Rural	500	7.41			
Upper Arm Circumference	Urban	500	15.06	-.09978	998	-.530
	Rural	500	15.16			
Fore Arm Circumference	Urban	500	15.04	-.07166	998	-.400
	Rural	500	15.10			
Thigh Circumference	Urban	500	32.47	-.32926	998	-1.16
	Rural	500	32.80			
Calf Circumference	Urban	500	26.23	-.20892	998	.916
	Rural	500	26.02			
Biceps Skin fold	Urban	500	12.85	-.10826	998	.362
	Rural	500	12.74			
Triceps Skin fold	Urban	500	15.21	-.70760	998	2.53*
	Rural	500	14.50			
Thigh Skin fold	Urban	500	16.19	-.10600	998	.450
	Rural	500	16.08			
Calf Skin fold	Urban	500	16.01	-.00200	998	-.008
	Rural	500	16.01			

Tab. 't' at 998 degree of freedom= 1.96

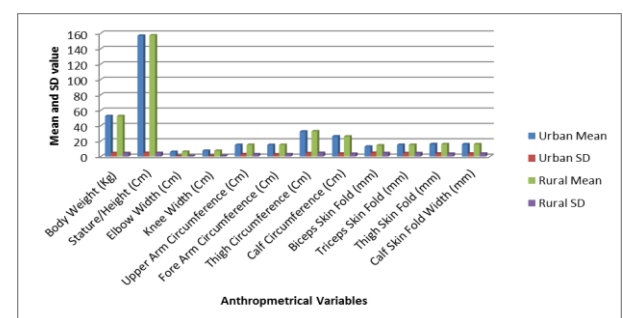
**Tab. 't' at 998 degree of freedom= 1.96**

Table 1- reveals that there is a significant difference found in Triceps Skin fold (Anthropometric Measurements) between Urban and Rural Girls of

Madhya Pradesh. Since, the calculate *t* value (2.53) is greater than the tabulated *t* value (1.96) at 0.05 level of significance. Hence, It is seems that the Triceps Skin fold (Anthropometric Measurements) of Urban Girls (M= 15.21) is found to be better than the Rural Girls (M= 14.50) of Madhya Pradesh.

Table1- also reveals that there are a no significant difference found in Anthropometric Measurements in case of Body Weight (*t* = .014), Height (*t* = 1.15), Elbow Width (*t* = 1.684), Knee Width (*t* = 1.24), Upper Arm Circumference (*t* = .530), Fore Arm Circumference (*t* = .40), Thigh Circumference (*t* = 1.16),Calf Circumference (*t* = .916), Bicep Skin fold (*t* = .362), Thigh Skin fold (*t* = .450) and Calf Skin fold (*t* = .008) between Urban and Rural Girls of Madhya Pradesh. Since, the calculate *t* value is lower than the tabulated *t*- value (1.96) at 0.05 level of significance. Hence, It is seems that the Urban and Rural Girls of Madhya Pradesh are found to be similar in case of following Anthropometric Measurements i.e. Body Weight, Height, Elbow Width, Knee Width, Upper Arm Circumference, Fore Arm Circumference, Thigh Circumference, Calf Circumference, Bicep Skin fold, Thigh Skin fold and Calf Skin fold.

**Figure 1: Graphical Representation of Mean and SD of Anthropometric measurements of Rural and Urban Girls of Madhya Pradesh**



**CONCLUSIONS:**

Within the limitations of the present study: The following conclusions were drawn:

- Significant difference was found between Urban and Rural Girls of Madhya Pradesh in relation to Triceps Skin Fold Width.
- Urban Girls of Madhya Pradesh were having greater Triceps Skin Fold Width in comparison to rural girls of Madhya Pradesh.
- Insignificant difference was found between Urban and Rural Girls of Madhya Pradesh in relation to Body Weight, Stature Height, Elbow Width (Diameter), Knee Width, (Diameter), Upper-Arm Circumference, Fore-Arm Circumference, Thigh Circumference, Calf Circumference, Biceps

Skin fold Width, Thigh Skin fold width, Calf  
Skin fold width.

#### **REFERENCES:**

Allen Phillips and James F. Hark (1979).  
“Measurement and Evaluation in Physical  
Education”, New York John Willey and Sons,  
p. 223.

Charles Horold. Mc Cloy and Norma Dorothy Young  
(1954). “Test and Measurement in Health  
and Physical Education”, New York:  
Appleton Country Crofts, p. 345.

Singh, B. and Bhola, G. (2012). “Comparison of  
Selected Anthropometric Measurements and  
Physical Fitness of Haryana School boys in  
Relation to Their Social Status”, Indian  
Journal of Movement Education and  
Exercises Sciences, p. 2.

---

#### **Corresponding Author**

**Savsingh Chouhan\***

Research Scholar, School of Physical Education,  
DAVV, Indore

[savsinghchouhan44@gmail.com](mailto:savsinghchouhan44@gmail.com)