

**STUDY ON BODY COMPOSITION AND DIFFERENT SOCIO-ECONOMIC STATUS OF HIGH SCHOOLS STUDENTS**



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**ABSTRACT**

The main objective of the study was to know the Body Composition and different Socio-Economic Status of High Schools Students. 240 students were selected purposively from the 03 government high schools of Basti District of Uttar Pradesh State, in which 120 were male and other 120 were female students. All subjects were selected with the help of simple random sampling technique. The collected data was analyzed by using 2x4 ANNOVA, to test the significance of the results. The level of significance was kept at 0.05 to test the hypothesis. After Analysis following conclusions were drawn: I) there was significant deference in height dimension body composition among the students of deferent socioeconomic status school. II) It was found that there was significant deference in fat percentage dimension of body composition among the students of deferent socioeconomic status school and it was also found that there was significant deference in BMI dimension of body composition among the students of deferent socioeconomic status school.

**Keywords:** Body Composition, Socio-economic Status & High School Students.

**INTRODUCTION**

In physical fitness, body composition is used to describe the percentages of fat, bone, water and muscle in human bodies. Because muscular tissue takes up less space in our body than fat tissue, our body composition, as well as our weight, determines leanness. Two people of the same sex and body weight may look completely different

because they have a different body composition. In a research laboratory setting, the overall density of the body ( $D_b$ ) is calculated from its mass and volume ( $D_b = \text{mass/volume}$ ). The mass of the body is found by simply weighing a person on a scale. The volume of the body is most easily and accurately determined by completely immersing a person in water and calculating the volume of water from the weight of water that is displaced (via "underwater weighing"). The proportions of water, protein and mineral in the body are found by various chemical and radiometric tests. The densities of water, fat, protein and mineral are either measured or estimated. Body composition measurement with dual energy X-ray absorptiometry (DEXA) is used increasingly for a variety of clinical and research applications. A DEXA scan requires medical supervision by a radiologist and some consider it to be the new "Gold Standard" in body composition testing. Total body scans using DEXA give accurate and precise measurements of body composition, including bone mineral content (BMC), bone mineral density (BMD), lean tissue mass, fat tissue mass, and fractional contribution of fat.

The estimation of body fatness from body density (by means of underwater weighing) was accepted as the "gold standard" for many decades. Some researchers now claim that whole body scanning techniques (e.g. "DEXA") are the new "gold standard". But these claims are somewhat dubious since the scanning algorithms are validated against body composition assessments based on fractional density from underwater weighing.

Socioeconomic Status (SES) is an economic and sociological combined total measure of a person's work experience and of an individual's or family's economic and social position in relation to others. When analyzing a family's SES, the household income, earners' education, and occupation are examined, as well as combined income, whereas for an individual's SES only their own attributes are assessed. However, SES is more commonly used to depict an economic difference in society as a whole.

Socioeconomic status is typically broken into three levels (high, middle, and low) to describe the three places a family or an individual may fall into. When placing a family or individual into one of these categories, any or all of the three variables (income, education, and occupation) can be assessed.

Additionally, low income and education have been shown to be strong predictors of a range of physical and mental health problems, including respiratory viruses, arthritis, coronary disease, and schizophrenia. These problems may be due to environmental conditions in their workplace, or, in the case of disabilities or mental illnesses, may be the entire cause of that person's social predicament to begin with.

#### **OBJECTIVE OF THE STUDY**

The main Objective of the study was to know the Body Composition and different Socio-Economic Status of High Schools Students.

#### **HYPOTHESIS OF THE STUDY**

- The study hypothesized that there will be significant difference in body composition among the students of different socioeconomic status schools.

#### **METHODOLOGY**

For the present study, 240 students were selected purposively from the 3 government high schools of Basti District of Uttar Pradesh State, in which 120 were male and other 120 were female students. All subjects were selected with the help of simple random sampling technique. The collected data was analyzed by using 2x4 ANNOVA, to test the significance of the results. The level of significance was kept at 0.05 to test the hypothesis.

**STATISTICAL ANALYSIS AND INTERPRETATIONS OF THE DATA**

**Table No-I**  
**Weight Dimension in Different Socio-Economic Status Schools Body Composition Component**

ANOVA comparing different socio-economic status schools body composition component

		Sum of Squares	df	Mean Square	F	Sig.
Weight	between Groups	6485.45	05	1297.09	13.512	.000
	Within Groups	22463.2	234	95.997		
	Total	28948.65	239			

Table no-I represent that comparison weight dimension between the different socio-economic statuses school for weight calculated F value is 13.512 with degree of freedom 05. Which shows statistically significant different at 0.05 significant level .this indicate that different economic status school wise significant different in weight dimension of body composition component.

**Table No-II**  
**Analysis of Height Dimension for Different Socio-Economic Status Schools Body Composition Component**

Descriptive statistics different socio-economic status schools body composition component

School type	N	Mean	Std. Deviation	Std. Error
Height	40	158.6	9.12815	1.44329
	40	161.2	7.61645	1.20427
	40	162.75	10.26757	1.62345
	40	149.55	6.68312	1.05669
	40	152.45	5.57904	0.88212
	40	154.125	6.04338	0.95554
Total	240	156.4458	9.01865	0.58215

The table II represent the descriptive statistics of height of different socio-economic status schools body composition component there were total 240 subjects belonged to the low socio-economic status school boys & girls, middle socio-economic status school boys & girls ,& high socio-economic status school boys & girls with mean. In height dimension mean was 158.6(+9.12), 149.55(+6.68), 161.20(+7.61), 152.45(+5.57), 162.75(+10.26), 154.12(+6.04) respectively,

**Table No-III**  
**ANOVA Comparing Height Dimension in Different Socio-Economic Status Schools**  
**Body Composition Component**

ANOVA comparing different socio-economic status schools body composition component					
		Sum of Squares	df	Mean Square	F
Sig.  .000	Height between Groups	5435.621	05	1087.124	18.166
	Within Groups	14003.68	234	59.845	
	Total	19439.3	239		

Table no-III represent that comparison height dimension between the different socio-economic statues school for height calculated F value is 18.166 with degree of freedom 05. Which shows statistically significant different at 0.05 significant level .this indicate that different economic status school wise significant different in height dimension of body composition component.

#### **FINDINGS**

**After Statistical Analysis the following findings were drawn:-**

- It was found that there was significant deference in height dimension body composition among the students of deferent socioeconomic status school.
- It was found that there was significant deference in fat percentage dimension of body composition among the students of deferent socioeconomic status school.
- It was found that there was significant deference in BMI dimension of body composition among the students of deferent socioeconomic status school.

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