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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 3 government high schools of Anand District of Gujarat, 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 (Db) is calculated from its mass and volume (Db = 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.

Anthropometry (from Greek - anthropos, "human", and μέτρον metron, "measure") refers to the measurement of the human individual. An early tool of physical anthropology, it has been used for identification, for the purposes of understanding human physical variation, in paleo anthropology and in various attempts to correlate physical with racial and psychological traits. Anthropometry involves the systematic measurement of the physical properties of the human body, primarily dimensional descriptors of body size and shape.

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 deference 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 Anand District of Gujrat, 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.

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	5	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 statues school for weight calculated F value is 13.512 with degree of freedom 5. 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.
Height	between Groups	5435.621	5	1087.124	18.166	.000
	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 5. 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.

Conclusion:

After Analysis following Conclusions 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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