COMPARISON OF THE OBESITY LEVEL AMONG STUDENTS OF HIGHER SECONDARY CLASSES OF GOVT AND PRIVATE SCHOOLS IN CHANDIGARH

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Abstract: *The present was designed to assess and compare the level of obesity among the students the higher secondary classes of government and private school BMI records. The simple random method was adopted for the selection of the sample For this purpose, fifty (N = 50) male and female students of 11th and 12th from Government Senior Secondary School Sector-37, Chandigarh and fifty (N=50), male and female students of 11th and 12th from Sishu Niketan Model Senior Secondary School, Sector-22 C, Chandigarh were selected. Independent "t" test was employed to identify significant differences between the mean scores of the government school and private school through SPSS to test the hypotheses, the level of significance was set at 0.05. it is concluded that no significant differences have been found between the scores of government and private schools.*

Key Words: Height, Weight, Body Mass Index, Obesity

INTRODUCTION

The **body mass index** (**BMI**) or **Quetelet index** is a value derived from the mass (weight) and height of an individual. The BMI is defined as the body mass divided by the square of the body height, and is universally expressed in units of kg/m^2, resulting from mass in kilograms and height in metres.

The BMI may also be determined using a table or chart, which displays BMI as a function of mass and height using contour lines or colours for different BMI categories, and may use two different units of measurement.

The BMI is an attempt to quantify the amount of tissue mass (muscle, fat, and bone) in an individual, and then categorize that person as *underweight*, *normal weight*, *overweight*, or *obese* based on that value. However, there is some debate about where on the BMI scale the dividing

lines between categories should be placed.[2] Commonly accepted BMI ranges are underweight: under 18.5 kg/m^2, normal weight: 18.5 to 25, overweight: 25 to 30, obese: over 30. People of Asian descent have different associations between BMI, percentage of body fat, and health risks than those of European descent, with a higher risk of type 2 diabetes and cardiovascular disease at BMIs lower than the WHO cut-off point for overweight, 25 kg/m^2, although the cutoff for observed risk varies among different Asian populations.[3]

Figure1. Obesity and BMI

The basis of the BMI was devised by Adolphe Quetelet from 1830 to 1850 during which time he developed what he called "social physics". [4] The modern term "body mass index" (BMI) for the ratio of human body weight to squared height was coined in a paper published in the July 1972 edition of the *Journal of Chronic Diseases* by Ancel Keys. In this paper, Keys argued that what he termed the BMI was "...if not fully satisfactory, at least as good as any other relative weight index as an indicator of relative obesity"[5][6][7]

The interest in an index that measures body fat came with increasing obesity in prosperous Western societies. Keys as appropriate for population studies and inappropriate for individual evaluation explicitly cited BMI. Nevertheless, due to its simplicity, it has come to be widely used for preliminary diagnosis. [8] Additional metrics, such as waist circumference, can be more useful. [9]

The BMI is universally expressed in kg/m^2, resulting from mass in kilograms and height in metres. If pounds and inches are used, a conversion factor of 703 (kg/m^2)/(lb/in^2) must be applied. When the term BMI is used informally, the units are usually omitted.

BMI provides a simple numeric measure of a person's *thickness* or *thinness*, allowing health professionals to discuss weight problems more objectively with their patients. BMI was designed to be used as a simple means of classifying average sedentary (physically inactive) populations, with an average body composition.[10] For these individuals, the current value recommendations are as follow: a BMI from 18.5 up to 25 kg/m^2 may indicate optimal weight, a BMI lower than 18.5 suggests the person is underweight, a number from 25 up to 30 may indicate the person is overweight, and a number from 30 upwards suggests the person is obese.[8][9] Some athletes, such as football linemen, have a high muscle to fat ratio and may have a BMI that is misleadingly high relative to their body fat percentage.[9]

METHOD AND PROCEDURE

The simple random method was adopted for the selection of the sample. The purpose of this study was to assess and compare the level of obesity among the students the higher secondary classes of government and private school through BMI records. For this purpose, fifty (N = 50) male and female students of 11^{th} and 12^{th} from Government Senior Secondary School Sector-37, Chandigarh and fifty (N=50), male and female students of 11^{th} and 12^{th} from Sishu Niketan Model Senior Secondary School, Sector-22 C, Chandigarh were selected.

Total=100
Private School= 50 Government School=50

Table 1. The Break-up of Total Sample

CATEGORIES

A frequent use of the BMI is to assess how much an individual's body weight departs from what is normal or desirable for a person's height. The weight excess or deficiency may, in part, be accounted for by body fat (adipose tissue) although other factors such as muscularity also affect BMI significantly (see discussion below and overweight).

The WHO regards a BMI of less than 18.5 as underweight and may indicate malnutrition, an eating disorder, or other health problems, while a BMI equal to or greater than 25 is considered overweight and above 30

is considered obese. [1] These ranges of BMI values are valid only as statistical categories.

Category	BMI (kg/m^2)		BMI Prime	
	from	to	from	to
Very severely underweight		15.0		0.60
Severely underweight	15	16	0.60	0.64
Underweight	16	18.5	0.64	0.74
Normal (healthy weight)	18.5	25	0.74	1.0
Overweight	25	30	1.0	1.2
Obese Class I (Moderately obese)	30	35	1.2	1.4
Obese Class II (Severely obese)	35	40	1.4	1.6
Obese Class III (Very severely obese)	40		1.6	

Table 2:- Describes the ranges of BMI

STATISTICAL TECHNIQUE

Independent/unpaired"t" test was employed to identify significant differences between the mean scores of the government school and private school through SPSS. To test the hypotheses, the level of significance was set at 0.05.

	Government School	Private School
Sample size	50	50
Airthmatic mean	16.50	16.59
Standard deviation	2.39	3.01
Standard error of the Mean	0.33	0.42

Mean difference	-0.09
95% CI	-1.17-0.98
Test Statistic t	0.17
Degree of freedom(DF)	98
	P=0.86

RESULTS AND DISCUSSION

Table 3:- Descriptive analysis of BMI Scores of Government School and Private School

Table3 depicts the results regarding Scores of Government School and Private School on the parameter BMI (Body Mass Index) of higher secondary level. The government school scores showed the Mean and SD values as 16.50 and 2.39 respectively. However, private school scores showed the Mean and SD values as 16.59 and 3.01 respectively. The "t" value 0.17 as shown in the table above was found statistically insignificant as the P-value 0.86 was found higher than 0.05 (P>0.05). The graphical representation of mean scores of BMI (Body Mass Index) of government school and private school has been presented in Fig.2.

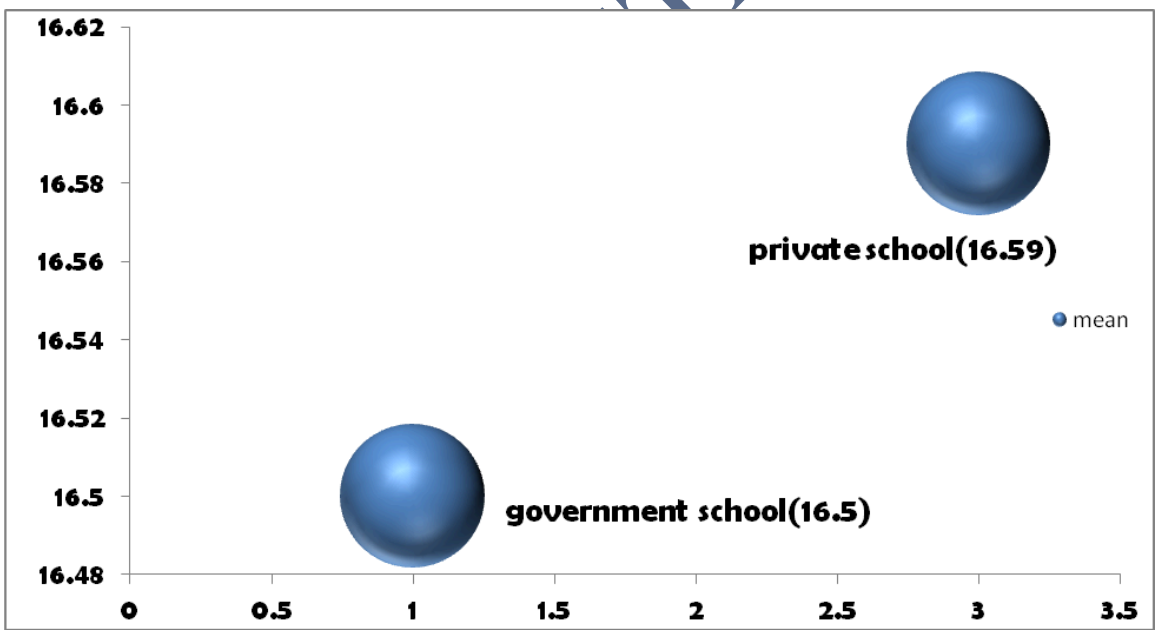

Figure 2. Graphical Representation of Mean Scores with Regard to BMI of Government School and Private School.

CONCLUSIONS

It is concluded that no significant difference has been found between the Government School and Private School scores of BMI(Body Mass Index).It revealed that BMI (Body Mass Index) of the students is not effected with the type of school many other factors such as lifestyle could be the reason.

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