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BMI status in respect of gender difference

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Abstract

The purpose of the study was to attempt to compare the BMI of the men and women group in respect of gender differences. The total observations are sixty (men group 30: women group 30). This observations are collected from the institution of Vivekananda Mahavidyalaya which locates in the Haripal rural area. Their mean height and weight of the men group is 1.72 meter and 61.47 kg., for women group is 1.56 meter and 49.20 kg and average age ranges are 20-24 years. The mean \pm SD of the men group is 20.82 \pm 3.70 and the women group is 20.18 \pm 3.04. The criterion measure for the purpose of the study is body mass index. The t-statistics of the two groups are 0.732 which is less than the tabulated value ($t_{0.05, 58}=1.672$). The significance value of the BMI $P=0.467$, which is not significant at 0.05 level between two means. The study found that the women group more underweight and less overweight than the men group. It is revealed that the women group is greater percentage in BMI than the men group in respect of normal category of BMI ranges. The study also found that women group is better in normal category than the men group and there is not a single student belong to obesity category.

Keywords: men and women students, BMI, rural locality, height, weight, age range

Introduction

The body mass index is defined as the person's body weight in kilograms divided by the height in meters squared (Keys *et al.*, 1972) ^[1]. From the view point of the nutritional aspects, higher fat intake in the diet may lead to higher risk of developing cardio-vascular disorders later in life, hence fat intake controlled our at younger age groups particularly in sports players. According to researcher BMI changes sustainability as children get older. For the case of children as well as adults BMI differs with adiposity which varies with age and gender (Hammer *et al.*, 1991) ^[2]. According to researcher, BMI does not directly measure body fatness. However, it parallel changes obtained by direct measures of body fat such as underwater weighing and dual energy X-ray absorptiometry (DEXA). BMI can be considered a proxy for measures of body fat. Age as well as stage of a sexual maturity is highly correlated with body fatness (Daniels *et al.*, 1997) ^[3]. In 1997, an international conference it is concluded that BMI is a reasonable measure for assessing overweight in children and adults worldwide (Dietz and Bellizzi, 1999) ^[4]. BMI for age is significantly correlated with subcutaneous and total body fatness in adolescents (Barlow and Dietz, 1998) ^[5]. In general, the men and women students as well as adults can be classified of their weights according to BMI classification chart. These chart categories are the same for men and women body types and ages. A high BMI value can be an indicator of high body fat. According to BMI-ranges the standard weight categories are as underweight which less than 18.5, normal 18.5-24.9, overweight 25-29.9 and the end classification is obesity which is 30 and above. It is also considered in colours as consecutively white, green, yellow and last one red. Accordingly to (Nuttall, 2015) ^[6] the BMI is the currently in use for defining anthropometric ht/wt characteristics in adults and categorizing into groups. It is represents an index of an individual's fatness and it is also used widely as health aspects. The health risks associated with increasing BMI are continuous and the interpretation of BMI gradings in relation to risk may differ for different populations (www.who.int/bmi/index-27.03.18). According to WHO in 2008, 35% of adults aged 20+ were overweight BMI ≥ 25 kg/m² (34% men and 35% women). It is also reported that in all WHO regions women were more likely to be obese than men. According to WHO information that the overweight and obesity lead to adverse effects on blood pressure, cholesterol, coronary heart disease, diabetes, prostate, gall bladder even risk of breast-cancer increase steadily with increasing body mass index.

Methodology

The sample consisted of sixty observations which collected from the college of Vivekananda Mahavidyalaya, Haripal in the district of Hooghly in west Bengal. The samples are divided into two groups, one for the men group and the other is women group of students. The men group is considered 30 numbers and the women group is 30 numbers of observations. The sample is selected on the basis of random sampling method from the students of physical education department. The observations collected from the rural areas. The age range of the two groups are belongs to 20-24 years. The age are calculated in a completed years on the basis of their date of birth. The average height and weight of the men group are 1.72 meter/67.72 inches and 61.47 kg and for the women group are 1.56 meter/61.42 inches and 49.20 kg. The measuring variable of the present study is body mass index

(Keys *et al.*, 1972) ^[1]. The BMI of the observations are analysis on the basis of BMI classification category.

Results and Discussion

The body mass index (BMI) of men and women groups is compared in percentage in respect of BMI-adult chart. The percentage values of the BMI are presented in the table-1. One the other hand the researcher is find out the Mean \pm SD of the BMI which represented in the table-2. In table-1, it is revealed that in underweight category, women group is 3.34% greater than men group, whereas men group 10% greater than women group in the category of overweight. It is shown that the women group 6.67% greater than the men group in the case of normal category. From the present study it is also found that not a student of men and women group is belong to obesity category in respect of BMI.

Table 1: Classification category and % values of men & women group of subjects

Classification	BMI-Range	No. of men students (n ₁ =30)	No. of women students (n ₂ =30)	Percentage values of students	
				Men group	Women group
Underweight	<18.5	10	11	33.33%	36.67%
Normal	18.5-24.9	16	18	53.33%	60%
Overweight	25-29.9	04	01	13.33%	3.33%
Obesity	>30	Nil	Nil	Nil	Nil

Table 2: Mean \pm SD of BMI of men and women groups of the subjects

Group	N	Mean \pm SD	Mean Differ.	S. Error	P-Value	t-ratio
Men	30	20.82 \pm 3.70	0.640	0.874	0.467	0.732 ^{ns}
Women	30	20.18 \pm 3.04				

T_{0.05, 58}=1.672, ns=not significant

The mean \pm SD, the significant level or P value and the t-statistics are presented in the table-2. Here the mean \pm SD is 20.82 \pm 3.70 of men group and 20.18 \pm 3.04 for the case of women group. In table-2, it is revealed that the calculated t-value 0.732 is less than the table-value (t_{0.05, 58} =1.672). Hence; it is not significant at 0.05 level as the P value is 0.647. Therefore, in the present study, the men and women group insignificant in BMI. It is also clearly shown from the Fig.-1 of the BMI bar-diagram that there are difference existed in BMI between men and women group in respect of gender differences which is similar opinion of the researcher as Hammer *et al.*, 1991 ^[2]. According to the researcher like (Hammer *et al.*, 1991) ^[2] that body mass index is gender and age specific.

age ranges are 20-24 years;

That the students of men group are less underweight than the students of women group;

The students of women group are better healthy position than the students of men group;

The students of men group are greater overweight than the students of women group and

There have not a single student of men and women group belong to obesity category.

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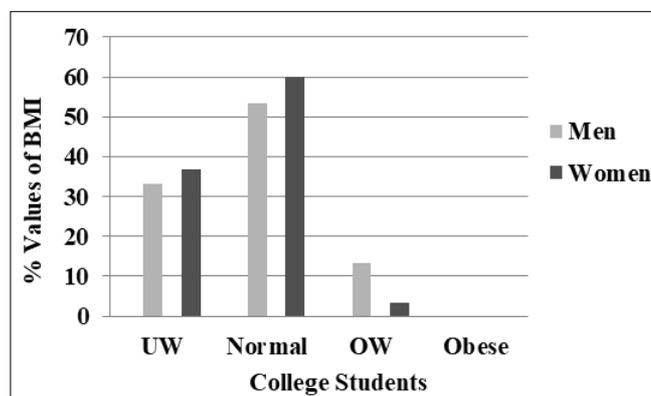


Fig 1: BMI of men and women groups of the subjects

Conclusion

On the basis of the present study, the researcher was concluded as follows:

The present study was confined to the college students which

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9. <https://www.who.int/en>. 18 March 2018.
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