Correlates of BMI among medical graduates in Kanpur

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Abstract

Background: Problem of malnutrition among medical students is double edged and includes both ends of the spectrum-underweight and obesity. It is increasing day by day due to adoption of western lifestyle and over consciousness towards their body image perception or looks has created a big issue of malnutrition among medical students. This can be assessed through BMI.
Study period: September 2016 to November 2016.
Method: It is institution based cross sectional study. A total of 375 students of 2nd & 3rd year of GSVM. Medical college, Kanpur were selected for study. Height &weight of students was measured for assessment of BMI and other parameters were assessed by using a predesigned and pretested questionnaire.
Result: On the basis of BMI, 33.1% of students were underweight and 24.6 of students were found overweight/obese. Among the underweight students, 65.9% were girls and 34.1% boys. Among overweight students, 48.4% girls and 51.6% boys. A significant association was observed between overweight and family history of obesity, gender, hours of sleep and diet. There was a significant association between underweight and gender.
Conclusion: Both types of malnutrition that is underweight and obesity was found in medical students and there is need for encouraging medical students for healthy food and lifestyle.

Keywords: Medical students, BMI, Obesity and underweight.

Introduction

Malnutrition of both types either underweight or overweight is common in medical students. Stress, burden of study, body image perception, adoption of western lifestyle, overeating, junk food and soft drinks etc has altered the healthy living. Anthropometry provides information regarding BMI, bone, muscle and fat components and also about the nutritional status of the individual. BMI provides the basic information of the individual and different daily habits and lifestyle activities. Stress alters the healthy eating and sleeping pattern of the students. Intense peer pressure and huge syllabus takes a toll on the health of the students as there is lot of burden from clinical posting, academics and performance in examination which also affects their BMI. With these reasons we proposed this study on medical graduates for proper assessment of their BMI and their correlates.

Material and Method

The present study is an institution based cross sectional study conducted in order to assess BMI and its correlates using anthropometry and general health questionnaire.Taking consideration of time and cost restraints, medical graduates of GSVM Medical College Kanpur were selected for the study.

All students of 2nd and 3rd professional present on the day of the interview were included in the study. These students were examined and interviewed during September, October & November 2016. Consent was taken before study. Observations were noted on pre designed and pre tested questionnaire in dept. of community medicine, GSVM medical college, Kanpur. Height was measured by standardised stadiometer and weight was measured using standardised weighing machine (Krups) with an accuracy of ±100 gm. Data was analysed using percentages and chi square test with the help of SPSS software.

Result

A total of 375 students of 2nd & 3rd professionals were involved in the study. According to BMI in total 375 students 43.3% were normal, 33.1% were underweight and 24.6% were overweight/obese (Table 1).

Table 1

BMI	No.	%
1.Underweight	123	33.1
2.Normal	161	43.3
3.Overweight	91	24.6
Total	375	100

In this study 69.2%(63) students had positive family history of obesity while 28 (30.7%) students have no family history of obesity and overweight/obesity students shows significant association with positive family history of obesity. 50(55%) of overweight /obese students belonged to joint family while 41(45%) of students belongs to nuclear family. 47(51.6%) of boys and 44(48.4%) girls were found to be overweight/obese and there was a significant association between gender and obesity. On the basis of sleeping hours 29(31.8%) of obese students had a habit of sleeping for <8hrs and

62(68.2%) of students had a habit of sleeping more than 8hrs and obesity has a significant association with sleeping hours. 71(78%) of the obese students were on mixed diet and 20(22%) were vegetarian which shows a significant association of overweight/obesity with mixed diet.(Table 2)

Table 2: Correlates of overweight among study subjects

Correlates	Overweight		Normal		P value
	No.	%	No.	%	
1.Family h/o of obesity					
Yes	63	69.2	33	20.5	<0.05
No	28	30.7	128	79.5	
2.Type of family					
Nuclear	41	45	82	50.9	>0.05
Joint	50	55	79	49.1	
3.Gender					
Male	44	48.4	111	68.9	<0.05
Female	47	51.6	50	31.1	
4.Duration of sleep					
>8hrs.	62	68.2	93	57.8	<0.05
<8hrs.	29	31.8	68	42.2	
5.Diet					
Vegetarian	20	22	108	67.1	<0.05
Mixed/non vegetarian	71	78	53	32.9	

In this study 67(54.6%) of underweight students had no history of obesity while 56(45.5%) of students were having positive history of obesity in the family. 61(49.6%) belonged to nuclear family and 62(50.4%) were from joint family. Among underweight students 81(65.9%) were girl students while 42(34.1) were boys which shows a significant relation of underweight with gender. There was no association between weight and duration of sleep. According to dietary habits 62(52.8%) of underweight students were vegetarian and 58(47.2) were on mixed diet vegetarian students shows a significant relationship of diet with underweight.(Table 3)

Table 3: Correlates of underweight among study subjects

Correlates	Underweight (n=123)		Normal(n=161)		P value
	No.	%	No.	%	
1.Family h/o obesity					
Yes	56	45.5	33	20.5	>0.05
No	67	54.5	128	79.5	
2.Type of family					
Nuclear	61	49.6	78	48.4	>0.05
Joint	62	50.4	83	51.6	
3.Gender					
Male	42	34.1	106	65.8	<0.05
Female	81	65.9	55	34.2	
4.Duration of sleep					
<8 hrs.	40	32.5	69	42.9	>0.05
>8 hrs.	83	67.5	92	57.1	
5.Diet					
Vegetarian	65	52.8	56	34.8	>0.05
Non vegetarian/mixed	58	47.2	105	66.2	

Discussion

In this study, we found that approximately 12.5% males and 11.7% females had BMI ≥ 25.0 kg/m^2 overall affecting 24.6% of total medical students. It was observed that overweight/obesity was more prevalent in males as compared to females. Our findings are similar to other studies in terms of high prevalence of obesity in medical students. A study in Greece showed that 40% of male and 23% of female students had BMI ≥ 25.0 kg/m^2.[5] A study in Slovakia showed that 16% of male but only 2% of female medical students had a BMI >25.0 kg/m^2.[10] In this study we found a significant relation

between obesity with positive family history of obesity 69.2% of overweight students shows positive family history of obesity. It was found similar to other studies conducted worldwide.

Obesity in boys (51.6%)were more common than girls (48.4%) and shows a significant relationship with obesity is more common in boys as only (31.1%) were found normal out of 161 normal students. Oversleeping also lead to obesity as it shown in the study 68.2% of overweight students slept for more than 8 hr.[8] A healthy diet is also needed for the proper maintenance of body functions and healthy lifestyle. Consumption of fast food and calorie rich food also lead to obesity. In our study we found 78% of students was obese which were on mixed diet pattern and was irregular meal plan several studies has shown similar results as shown in this study.

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