

Original Article**Prevalence of Overweight Among Medical Students: A Cross Sectional Study**

Sumi MN¹, Rahman H², Rahman MM³

1. * Dr. Mahmuda Nasrin Sumi, Associate Professor, Department of Physiology, Jahurul Islam Medical College, Kishoreganj.
2. Dr. Hafizur Rahman, Associate Professor, Department of Biochemistry, Jahurul Islam Medical College, Kishoreganj.
3. Dr. Md. Mahbubur Rahman, Professor, Department of Biochemistry, Jahurul Islam Medical College, Kishoreganj.

***For correspondence**

Abstract

Background: Overweight and obesity are recognized as escalating epidemics affecting both developed and developing countries. It's incidence is increasing day by day in Bangladesh. Obesity is associated with a large number of life threatening disorders like cardiovascular, metabolic and other non-communicable diseases. Medical students are exposed to a lot of stress throughout their education period. Hence, this study was designed to find out the prevalence of overweight and obesity among medical students.

Objective: The present study was conducted to observe the prevalence of overweight & obesity among the medical students of Jahurul Islam Medical College.

Methods: A descriptive cross sectional study was conducted in the Jahurul Islam Medical College. For this study, 100 medical students were enrolled. The weight and height of the students were measured and BMI was calculated.

Results: Out of 100 students who participated in the study, 48% were males and 52% were females. In this study, 31% were found to be overweight (31.25% males and 30.77% females), 9% were found to be obese (14.58% males and 3.85% females). In this study more than half of the students 56% were in the group of normal weight (52.08% males and 59.61% females). Also 4% were found to be underweight (2.08% males and 5.78% females).

Conclusion: The present study gives an idea about the high prevalence of overweight and obesity in medical students. This study reinforces the need for creating wakefulness regarding healthy diet and body weight management among the future physician population.

Key words: Overweight, Obesity, Body Mass Index, Medical students.

Introduction

Overweight and obesity are defined as abnormal and excessive fat accumulation within the body.¹ Obesity is one of the major public health problem worldwide.² According to World Health Organization, there are over 300 million obese adults and 1.21 billion overweight people worldwide.³ It is considered as a serious risk factors for major clinical illness like hypertension, diabetes mellitus, stroke, osteoarthritis, anesthesia risks, menstrual abnormalities, cardiovascular diseases as well as some types of cancer like colon and breast.⁴ Obesity is the 5th leading cause of death.⁵ Each year, approximately 2.8 million people die due to obesity.⁶

Obesity has been distinguished to be single best predictor and major controllable contributor of incidence of hypertension. Hypertension is a medical condition in which blood pressure is chronically elevated. Hypertension is one of the leading cause of morbidity and mortality now a days. Hypertension is strongly correlated with increasing BMI. The risk of hypertension is five times higher in obese as compared to those of normal weight. WHO classification was according to which students having blood pressure of 140/90 mmHg were labeled as hypertensive.

Medical education is stressful throughout the whole course of training. The amount of material to be absorbed, social isolation, pressure of examination, discrepancies between expectation and reality all can be anticipated to bring psychological stress. Medical students are more prone to develop overweight and obesity due to their lifestyle with less physical activity and disordered eating habits. Less physical activity among medical students causes less energy expenditure than food intake leading to overweight and obesity.⁷ Less time available for breakfast/ lunch in college hour

due to busy class routine contributes to frequent intake of tea/ coffe/ juices which actually exacerbate the condition.⁸ Other contributing factors include increased junk food consumption and family history of overweight and obesity.⁹

This obesity may be the contributing factor of developing hypertension among medical students in future. Among the many indices used to measure Body Mass Index (BMI) is the widely accepted tools to diagnose obesity. Based on the World Health Organization (WHO) BMI cut-offs for the international classification of body weight, a BMI < 18.5 kg/m² is categorized as underweight, 18.5-24.9 kg/m² as normal, 25-29.9 kg/m² as overweight and ≥ 30 kg/m² as obese.¹⁰

Methods

A descriptive cross sectional study was conducted in Jahurul Islam Medical College, Bajitpur, Kishoregonj from January 2021 to March 2021. The study population was consisted of 100 second year medical students age ranging from 21-22 years. Both male and female students were enrolled. A written questionarre was used to collect and record information on age, sex, weight in kilograms and height in meters of each subject. BMI was calculated with the formula: weight(kg)/height (m²). Students were categorized according to BMI into underweight, normal weight, overweight and obese.

Results

A total of 100 medical students participated in the study and the age range of the students was from 21-22 years. Table I shows the sociodemoghrapic characteristics of the students. The majority of the students were female (52).

Table I: Sociodemographic characteristics of students (n=100)

Gender	No of students
Male	48
Female	52

Table II shows the distribution of the students according to BMI. Out of the study population, obesity was found in 9 (9%) individuals, overweight among 31 (31%). More than half of the students were found to be in normal weight 56 (56%). The proportion of overweight was almost similar in both sex but the proportion of obesity was higher in male (14.58%) than female (3.58%). Only 4 students were found to be in underweight out of which majority were the female students.

Table II: Distribution of the students according to BMI

Classification	BMI (kg/m ²)	Male		Female		Total	
		No	%	No	%	No	%
Underweight	< 18.5	1	2.08	3	5.78	4	4
Normal weight	18.5-24.9	25	52.08	31	59.61	56	56
Overweight	25-29.9	15	31.25	16	30.77	31	31
Obese	≥30	7	14.58	2	3.85	9	9
Total		48	100	52	100	100	100

Discussion

Obesity and overweight has emerged as a global epidemic during the last few decades. In our study when the overweight group and the obese group are combined, they account for 40 % of the study population, which is much higher than the findings of other studies conducted in different countries of the world. A study was conducted in Malaysia and they found the overall prevalence of overweight and obesity in the medical students were 30.7%.¹¹ A study was conducted in Eastern UP to determine the prevalence of obesity among medical students and found 25.3% students were overweight and obese.¹² A study conducted in India among undergraduate medical students showed an overall prevalence of overweight and obesity were 20.9 %.¹³ Another similar study by Chhabra et al. reported overall prevalence of overweight and obesity were 13.7% among medical students of Delhi.¹⁴ A cross sectional study was conducted in Haryana and found 25.4% medical students were in the group of overweight and obese.¹⁵ So, it is clearly seen that the prevalence of overweight and obesity among medical students of Jahurul Islam medical College is very high. Students were mostly

eating junk food instead of balanced diet. Due to use of online social media the degree of physical activity has further declined in the students.

In the current study, underweight students were 4% (5.78% females and 2.08% males). According to Boo et al. in a Malaysian study, 15 % of medical students were underweight (7% males and 24% females).¹⁶ So, here it was found that the proportion of underweight students were higher in female than male. This could be due to the current trend for slimness rather than malnutrition. This trend was also highlighted by Minhas et al. in a similar study conducted in Pakistan.¹⁷ Being underweight has many medical implications and can lead to psychological disorder.

Conclusion

From the study results, it can be concluded that the prevalence of overweight and obesity among the medical students of Jahurul Islam Medical College is high. So it is very important to create awareness among the students about the health hazards of obesity as they have to guide the general people in future. Nutritional education on dietary practices and life style change should be built in as supporting educational activity

during student years. The study also reinforces the need of doing physical exercise and regular checking of body weight. Regular screening of body weight is a valuable approach to prevent overweight and obesity and its associated morbidities.

References

1. Harvey RA, Ferrier DR. Lippincott's Illustrated Reviews: Biochemistry. 5th edition. Wolters Kluwer Publication. 2011:347.
2. Campos P, Saguy A, Ernsberger P, Oliver E, Gaesser G. The epidemiology of overweight and obesity: public health crisis or moral panic? *Int J Epidemiol.* 2005;35(1):55–60.
3. Obesity and Overweight: WHO Global Strategy on Diet, Physical activity and Health. 2003: 1-21.
4. Van den Berg E, kloppenborg RP, Kessels RP, Kappelle L J, Biessels GJ. Type 2 diabetes mellitus, hypertension, dyslipidemia and obesity: A systemic comparison of their impact on cognition. *Biochim Biophys Acta.* 2008; 1792:470-481
5. Mokdad AH, Ford ES, Bowman BA, Dietz WH, Vinicor F, Bales VS et al. Prevalence of obesity, diabetes, and obesityrelated health risk factors. *JAMA.* 2003;289(1):76–9.
6. Deotale MK, Ranganathan U, Akarte S. Prevalence of overweight and obesity among medical students and their knowledge, attitude and practices about obesity. *Int J Sci Rep.* 2015;1(1):74–9.
7. Goran MI, Treuth MS. Energy expenditure, physical activity and obesity in children. *Pediatr Clin North Am.* 2001;48(4):931–53.
8. Chourdakis M, Tzellos T, Papazisis G, Toulis K, Kouvelas D. Eating habits, health attitudes and obesity indices among medical students in northern Greece. *Appetite.* 2010;55:722–5.
9. Singh AK, Maheshwari A, Sharma N, Anand K. Lifestyle associated risk factors in adolescents. *Indian J Pediatr.* 2006;73:901–6.
10. Bloomgarden ZT. Gut hormones, obesity, polycystic ovarian syndrome, malignancy and lipodystrophy syndromes. *Diabetes Care.* 2007;30:1934-39.
11. Gopalakrishnan S, Ganeshkumar P, Prakash MVS, Christopher, Amalraj V. Prevalence of overweight / obesity among medical students, Malaysia. *Med J Malaysia.* 2012;67(4): 442-44.
12. Agarwal S, Sinha V, Kachhawa P, Kumar A. Study of body mass index in first year MBBs students in a medical college of Eastern UP. *International Journal of Medical Science and Public Health.* 2017;6(2): 262-65.
13. Gupta S, Ray TG, Saha I. Overweight, obesity and influence of stress on body weight among undergraduate medical students. *Indian J Community Med.* 2009;34:255-7.
14. Chhabra P, Grover VL, Aggarwal K, Kanan AT. Nutritional status and blood pressure of medical students in Delhi. *Ind J Comm Med.* 2006;31:245-8.
15. Yadav SS, Saini P, Khan ZA, Bachloo T, Kumar R, Singh J. Assessment of body mass index among undergraduate medical students- a cross-sectional study from the medical college of Haryana. *International Journal of Medical Science and Public health.* 2016;5(4): 705-8.
16. Boo NY, Chia GJQ, Wong LC, Chew RM, Chong W, Loo WCN. The prevalence of obesity among clinical students in a Malaysian medical school. *Singapore Med J.* 2010;51(2):126.
17. Minhas HT, Anis D, Jawaid A, Naeem H, Naz M, Zuberi BF. Estimation of body mass index in students of a public sector medical college in Pakistan. *Pak J Med Sci.* 2010;26(4):918-22.