

## OVERWEIGHT AMONG MEDICAL STUDENTS IN UNIVERSAL COLLEGE OF MEDICAL SCIENCES: A DESCRIPTIVE CROSS SECTIONAL STUDY

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### ABSTRACT

### INTRODUCTION

Overweight is a lifestyle disorder affecting both physical and psychological health of a person. The rate of overweight index is rising in people from all walks of life. The main aim of this study is to find out the prevalence of overweight among medical students in a tertiary care center creating self-awareness in them.

### MATERIAL AND METHODS

This is a descriptive cross-sectional study done in 385 students in a tertiary care hospital from 15th August 2022 to 30th November 2022. The sample was collected by simple random sampling method after the approval from the Institutional Review Committee of Universal College of Medical Sciences (reference number UCMS/IRC/100/22). Height in meter and weight in kilogram of students were measured to calculate body mass index and grouped according to Asian Criteria categories normal BMI is between 18.5 to 22.9 kg/m<sup>2</sup>, BMI 23 to 24.9 kg/m<sup>2</sup> would be considered as overweight and BMI > 25 kg/m<sup>2</sup> would be considered as obese. Data was analyzed by using Statistical Package of Social Science software version 16.

### RESULTS

Among 385 students, 70 (18.1%) were found to be overweight with 95% Confidence Interval. Overweight males were 37 (9.6%) and females were 33 (8.5%) respectively out of the total number of male 173 (44.93%) and female 212 (55.07%). The mean age of the students and the mean BMI was found to be 21.01 ± 2.01 and 22.39 ± 3.54 respectively.

### CONCLUSION

The current study shows the prevalence of overweight among medical students is slightly higher than in studies done in similar settings.

### KEYWORDS

Anthropometry, Body mass index, Overweight, Prevalence

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## INTRODUCTION

In this digital era where junk food, snacks and carbonated drinks are just one click away, where onscreen games are more popular than outdoor games the physical activity of overall population is drastically minimized. The World Health Organization has revealed that there are over 300 million obese adults and 1.1 billion overweight people worldwide.<sup>1</sup>

‘Overweight and Obesity’ is the accumulation of excessive fat. Several factors such as diet, genetic predisposition, lack of physical activity, other behavioral factors lead to this complex disease.<sup>2</sup> The metabolic changes predisposes to high risk of hypertension, diabetes mellitus, orthopedic complications, psychological disorders.<sup>1</sup> The esthetic aspect of it also deteriorates the quality of life due to low self-esteem and low self-confidence.

Body Mass Index (BMI) is an epidemiological marker of nutritional status of adolescents.<sup>3</sup> The ideal body weight of an individual would be a BMI between 18.5 to 22.9 kg/m<sup>2</sup>, BMI 23 to 24.9 kg/m<sup>2</sup> would be considered as overweight and BMI > 25 kg/m<sup>2</sup> would be considered as obese.<sup>4</sup>

Increased BMI i.e. overweight and obesity poses more risks to the health of a person than the adverse effects of smoking and alcohol combined.<sup>1</sup> The medical students who are the future health professionals are idolized by the general public. They cannot afford many leisure hours so are least involved in physical exercise and their dietary choice is also highly compromised. This is a high time we highlight this condition and put forward the preventative measures feasible.<sup>5</sup> This study done in the medical students is believed to encourage them to choose a healthier dietary habit and lifestyle.

## MATERIAL AND METHODS

A Descriptive cross-sectional study was carried out among undergraduate healthy medical students, aged between 17 to 25 years. The study was started from 15<sup>th</sup> August 2022 to 30<sup>th</sup> November 2022 with approval of the Institutional Review Committee (IRC) of Universal College of Medical Sciences (reference number UCMS/IRC/100/22) of The sample was selected by a simple random sampling method. The sample size was calculated by using the following formula,  $n = Z^2 \times p \times q / e^2$   $n = (1.96)^2 \times 0.5 \times 0.5 / (0.05)^2$  where, n= sample size; Z= 1.96 for 95% Confidence Interval (CI); p= prevalence of overweight for maximum sample size = 50%; q = 1-p;

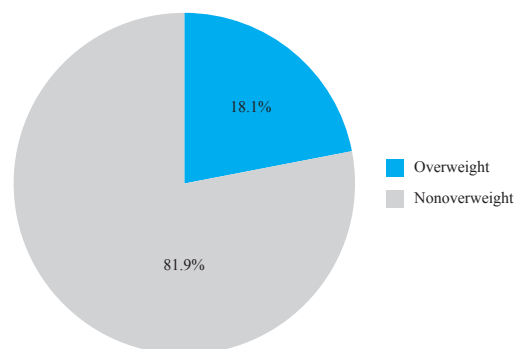
e = margin of error, 5%. Based on the above formula, the minimum sample size was 385. The students were explained about the objective of the study and a written consent was obtained. Students having history of fever, typhoid, diarrhea, metabolic disorders, or any other medical condition in last two months which could have affected their body weight were excluded from the study. A generalized questionnaire was used to collect and record the information on age, sex, and educational status, height in meters and weight in kilograms of each subject. A high degree of agreement between self-reported and measured values of height as well as weight of the students has been observed in previous studies.<sup>5</sup> or convenience and simplicity, this study also employed self-reported data. Those students who had to attend Physiology practical classes their weight was

measured by standing straight with bare feet on a standardized weighing machine and their occiput, buttock and heel had to touch the stadiometer when measuring height without any shoes in the physiology lab itself. The measurements were taken using height measuring scale and measuring tape under supervision. BMI was calculated using the formula weight (in kilogram) divided by height in meter square. According to WHO (World Health Organization) BMI for Asian Criteria: BMI less than 18.5 was considered underweight, 18.5 to 22.9 normal weight; 23-24.99 is overweight, pre-obese  $\geq 25-29.9$  and obese  $\geq 30$ .<sup>6</sup> It was then used to analyze overweight in the study. Data were entered into Microsoft Excel Sheet and analyzed by using Statistical Package of Social Science (SPSS) software version 16.

The agreement between self-reported and measured values of height and weight gives justification to the validity in using self-reported values in epidemiological studies.<sup>7</sup>

## RESULTS

In the present study, out of the total 385 students, 70 (18.1%) were found to be overweight according to the BMI Asian criteria with 95% Confidence Interval as depicted in Figure 1.



**Figure 1. Prevalence of overweight**

In total, overweight males were 37 (9.6%) and females were 33 (8.5%) respectively out of the total number of male 173 (44.93%) and female 212 (55.07%) (Table 1).

**Table 1. Overweight in males and females respectively**

Gender	Over weight n (%)	Total n (%)
Male	37 (9.6%)	173 (44.93%)
Female	33 (8.5%)	212 (55.07%)
Total	70 (18.1%)	385 (100%)

The mean age of students was calculated to be  $21.01 \pm 2.01$  (standard deviation) and the mean BMI was found to be  $22.39 \pm 3.54$  as depicted in table 2.

**Table 2. Mean age and mean BMI out of total 385 students**

Gender	Mean	Standard deviation
Age	21.01	2.01
BMI	22.39	3.54

## DISCUSSION

Our study result showed 18.1% i.e. 70 students out of the total 385 students were overweight affecting 9.6% males and 8.5% female medical students. In our findings the prevalence of overweight was only slightly lower than in the similar study done by Chandra R, which showed 19.48% medical students were overweight.<sup>1</sup> Another Study done by Amatya showed 19.4% overweight in medical students as well which was under the Asian BMI criteria their result is higher than the result of our study.<sup>5</sup> In another study done in Malaysian medical students the prevalence of overweight was found to be 15.8% which was lower compared to our study.<sup>8</sup> Study done by Thomas E found that the prevalence of overweight/obesity obtained was 30.6% among medical students which is significantly more than our study but they also found that overweight in boys was 39.8% and it was 25.5% in girls i.e. male showed more prevalence with overweight than girls which is similar to our study.<sup>2</sup> Contrary to the current study, higher prevalence of overweight is seen in females 15.7% and 13.7% males in the study done by GopalKrishnan.<sup>8</sup> In another study done by Martha Fors 17.4% were overweight medical students which is less compared to our result.<sup>9</sup> Another study done by Rui Wang in adult population showed 32.3% which is higher than present study. Their study found higher prevalence among male (34.3%) than female (30.2%) which is similar to this study.<sup>10</sup>

Generally, the females are found to be more beauty and health conscious than males so they are more careful about what they eat and also consume less junk food than males. On the other hand males are less bothered. This may be one of the various reasons as to why the prevalence of overweight is found to be more in males than females. Overweight is a complex condition affecting not just the physical but also social and psychological dimensions of an individual of any age group. This study is only confined to the medical students with similar age group and socio-economic backgrounds representing only a fraction of the population. Therefore the generalization of the result of this study cannot be done for the whole population. Larger sample size with varied socioeconomic, age group and education background, co-relation between BMI and stress or sleep disorders or that affecting our day to day activities might have greater value in research.

## CONCLUSION

The study reveals only a part of the population out of which the males' overweight population was found to be 9.6% and overweight females were 8.5% suggesting that the prevalence of overweight is gender specific. But various other factors such as a person's age, their stress level, dietary habits, involvement in physical activities can influence the BMI. Overweight can lead to devastating health problems therefore if the students are counseled on time about healthy habits, maintaining BMI a lot of serious health issues can be avoided.

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## CONFLICT OF INTEREST

None

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