

Original Article

# A STUDY ON THE PREVALENCE OF OVERWEIGHT AND OBESITY AMONG MEDICAL STUDENTS OF SOUTH INDIANS

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## Abstract

Malnutrition includes both over nutrition and under nutrition. Country like India harbors burden of both types. College students are highly vulnerable to malnutrition as they seem to be nonchalant about their dietary habits, physical activity and general health due to academic burden and lack of time. With increasing importance given to physical appearance one group of students are into diet, consumption of dietary pills and bulimia. On the other hand, another set of students are addicted to junk food and sedentary life and end up in over nutrition. To estimate the prevalence of malnutrition among medical students b) To assess the factors associated with malnutrition among medical students. A cross sectional study was done among undergraduate medical students. A semi-structured questionnaire was self-administered among 100 students and also anthropometric examination was conducted and BMI was calculated with the Quetelet's equation (weight in kg divided by height in m<sup>2</sup>) The dietary habits and intensity and frequency of physical activity were questioned. The data was entered in an Excel sheet and the results were tabulated. According to the WHO BMI scale, 7 students were underweight, 58 were healthy, 28 were overweight and 7 were obese. Obese and Overweight students were found to be more lethargic and had worse dietary habits than the healthy students. Obesity and overweight are quite common among medical students. Awareness about the ill effects of malnutrition has to be provided and medical students should be encouraged to take care of their health so that they can adapt to a healthy lifestyle and also practice the education of health promotion among their patients in future.

**KEYWORDS:** Nutrition, BMI, Obese, Food habits, Weight

### 1. Introduction:

Nutrition is necessary to ensure state of good health for an individual. A balanced diet includes adequate yet not excess amount of calories, proteins, fats, vitamins and minerals. Malnutrition includes both over nutrition and under nutrition. Country like India harbors burden of both types of malnutrition at a high prevalence. It is of utmost importance to ensure that everybody maintains their BMI in the range of 18.5 – 25, which is considered normal according to WHO standards. Overweight is associated with increased morbidity and mortality. The risk of morbidity from coronary heart disease and atherosclerosis is increased among men and women who had been overweight in adolescence<sup>1</sup>. Weight loss in overweight people is difficult to sustain and may lead to weight cycling<sup>2</sup>. It is thus important to maintain a constant and normal weight for a person's corresponding height. College students are highly vulnerable to malnutrition as they seem to be nonchalant about their dietary habits, physical activity and general health due to academic burden and lack of time. With increasing importance given to physical appearance one group of students are into diet, consumption of dietary pills and bulimia. On the other hand, another set of students are addicted to junk food and sedentary life and end up in over nutrition. Obesity and overweight are increasing nowadays among medical students.

Obesity is a preventable problem. It can be prevented by following a balanced diet, intense and consistent physical activity. Worldwide, the intake of fatty foods and high-calorie foods have increased drastically which has brought the topic of obesity and its health effects to limelight. It is being viewed as a serious issue as it has become very common and is a risk factor for a lot of health disorders. Obesity has also become prevalent among medical students. An observation by the Indian Medical Association's (IMA) Pune chapter says that an Indian doctor's average lifespan is 55-59 years, almost 10 years lesser than that of the general population<sup>3</sup>. Medical students have very little time to take care of themselves. The academic burden imposed on them, staying away from home in hostels and the change in lifestyle trends takes a toll on their healthy living. Medical students are the doctors of tomorrow, they are the care takers of the future. So, it is imminent that they allot enough time and energy to make sure they are healthy and can efficiently care for their patients. Hence this study was conducted among the medical students in an urban area. Our aim is to estimate the prevalence of malnutrition among medical students and to assess the factors associated with malnutrition among medical students.

### 2. Material and Methods:

The study was conducted, among undergraduate medical students in a medical college NRI Institute of Medical Sciences, Andhra Pradesh. In the stipulated study period, the data was collected using a semi-structured questionnaire by self-administration method among 100 medical students, by adopting convenient sampling method. Informed consent was taken. Along with the questionnaire administration, anthropometric measurements (Weight, Height) were also done among all the participants by using same weighing machine and height stand. The height and weight of the students were used to calculate the BMI according to the Quetlet's equation (weight in kg divided by height in m<sup>2</sup>). The students were grouped into four groups according to the BMI (WHO Standards) as underweight (less than 18.5), normal (18.5 – 24.9), overweight (25 – 29.9) and obese (more than 30). The students were questioned about their dietary habits, their physical activity, their ability to concentrate and their energy levels. The data was entered in an Excel sheet and the analysis performed. Results were presented in tables and figures form. The study was taken the ethical committee approval from the Institutional Ethical Committee.

### 3. Results and Discussion:

Total number of medical students who participated was 200, out of which 115 were females and 85 were males. Among these students 27.5% were found to be overweight and 9.5% were found to be obese. Out of the obese students, 68% were found to be males and the rest 32% were females. 7 students were found to be underweight. Table 1 depicts that more females have a normal BMI when compared to their male counterparts and a clear majority of the obese students were males.

**Table.1: Gender-wise distribution of Body Mass Index (BMI) among medical students (n=100)**

SEX	UNDERWEIGHT	NORMAL	OVERWEIGHT	OBESE
MALE	2	23	15	5
FEMALE	5	35	13	2
TOTAL	7 (7%)	58(58%)	28 (28%)	7 (7%)

**Table.2: Frequency Of Lethargy Among Normal And Obese Students**

	NEVER	RARELY	SOMETIMES	OFTEN
NORMAL	3%	22%	50%	25%
OBESE	0	16%	47%	37%

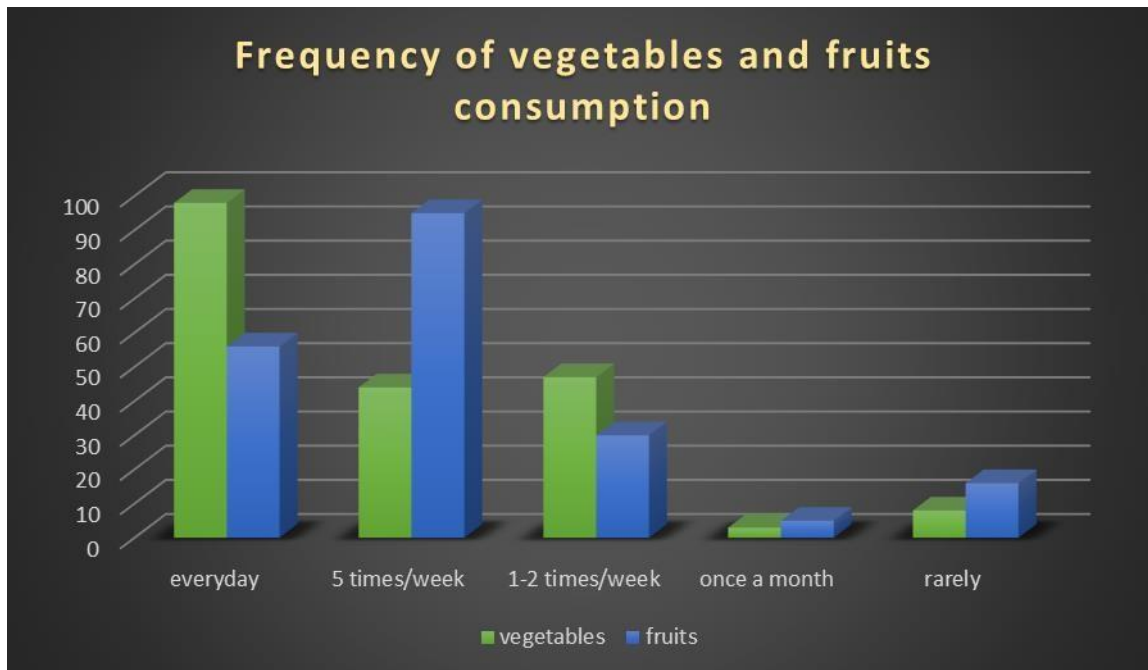
The phytochemicals in fruits and vegetables have been found to act as anti-obesity agents because they may play a role in suppressing growth of adipose tissue. Figure 1 shows that 47.5% of the students do not consume fruits and vegetables as adequately as required. Figure 2 shows that the consumption of unhealthy foods was harmfully high. The consumption of chocolates was found to be most frequent, followed by fried foods, ice creams, sweets and aerated drinks. Commonly skipped meals by the medical students. 47% eat regularly and do not skip any meals, 46% skip breakfast, 2% skip lunch and the rest 6% skip dinner. Breakfast, the supposedly most important meal of the day, the meal which gives us the energy to carry on with the important activities of the day, is the most commonly skipped meal by the students. This is probably attributed to the fact that the students don't have enough time to eat their breakfasts they are in a hurry to get to the morning classes.

Figure 3 shows the physical activity done by the medical students divided into 4 groups according to the BMI. Physical activity is an important tool to help reduce and maintain the weight of an individual and it also has long term effects on the mental well-being of people. In this study, 49% of the overweight students were found to have less than required physical activity per week. 36% of the obese students, 45% of healthy students and 30% of the underweight students don't practice physical activity as frequently as is ideal. 20% of the students do not engage in physical activity at all, while 58% engage in moderate intensity of workout and only 22% engage in vigorous workout.

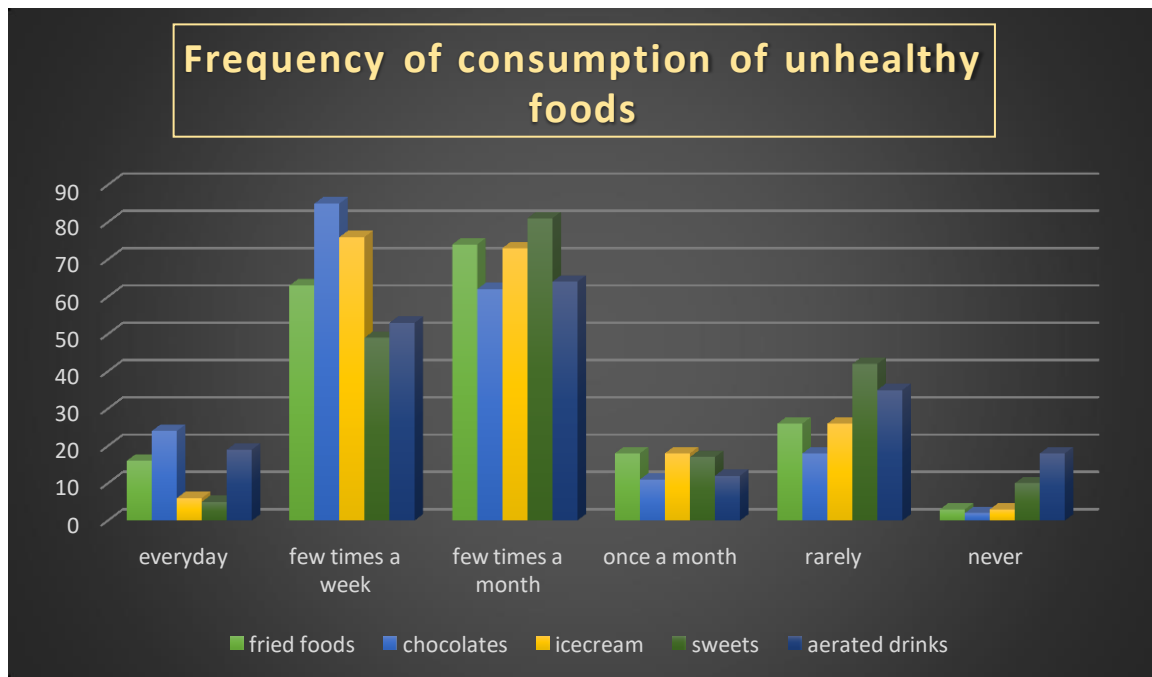
In the present study, according to the WHO-BMI scale, 57.5% were in the normal BMI range out of which 55% of the healthy students were females and the rest 45% were males. The underweight proportion of the students was 7%, out of which 55% were females. This is similar to other studies conducted in Kerala, Kanchipuram and Romania.<sup>5,6,7,8</sup> In the present study 7% that is, 7 out of 100 students were obese. Out of these obese students, 80% were males and only 20% were females. This is similar to other studies which also showed that the majority of obese people in a sample population are males. Obesity is more common among males as compared to females.

This study found that majority of the students did not consume healthy foods like fruits and vegetables. The consumption of fruits and vegetables are generally below the required level whereas the intake of fattening, unhealthy foods like fried stuff, chocolates, ice creams, cakes, sweets and aerated drinks is high enough to cause severe adverse effects. This was comparable to a study done among medical students in Karachi where the consumption of junk foods was similarly high<sup>9</sup>. Though more than half of the students eat 3 meals regularly, breakfast is the most commonly skipped meal which is in accordance to the general trend right now.

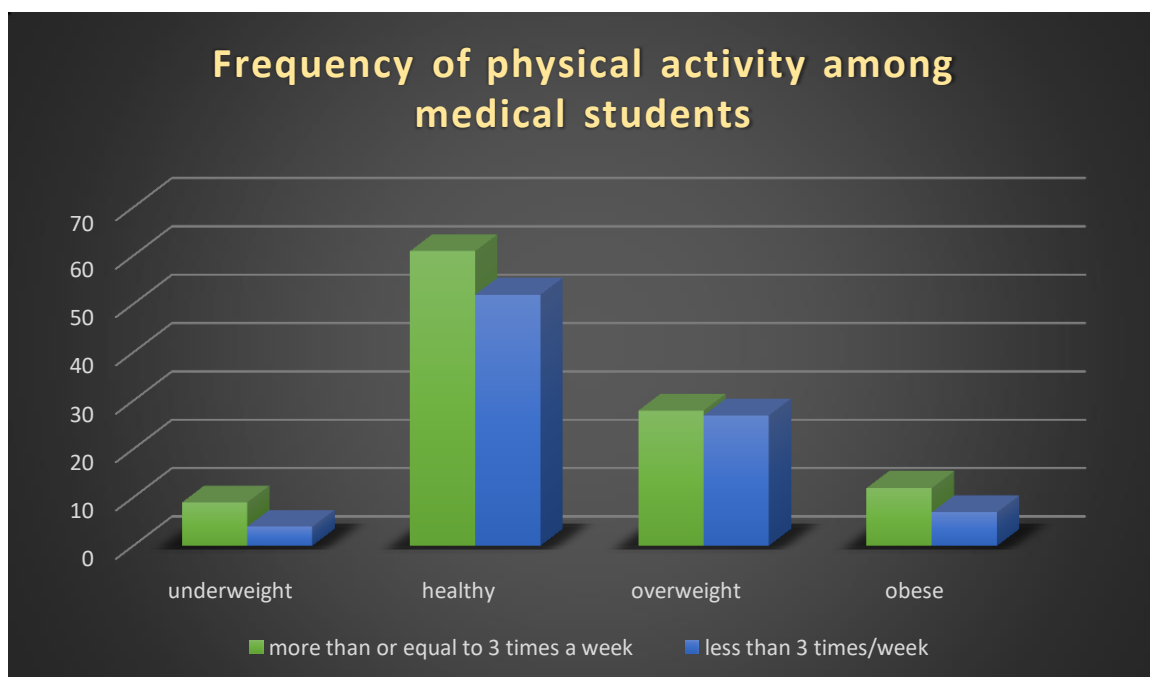
Physical activity reduces the risk of premature mortality in general, and of coronary heart disease, hypertension and diabetes mellitus in particular. Physical activity also improves mental health and is important for the health of muscles, bones and joints<sup>10</sup>. In this study, 28% of the overweight students were found to have less than required physical activity per week. 37% of the obese students, 58% of healthy students and 7% of the underweight students don't practice physical activity as frequently as ideal. In a study by Gutin B et al. those adolescents who involved in intense physical activity were lean and healthy.<sup>11</sup> The overweight and obese students were found to be more lethargic when compared to their healthier counterparts.



**Figure.1: Frequency of consumption of vegetables and fruits among medical students**



**Figure.2: Frequency of consumption of unhealthy food among medical students**



**Figure. 3: Frequency of physical activity among medical students**

#### 4. Conclusion:

The prevalence of malnutrition was found to be 43.5%. Out of these, underweight population was 7%, overweight was 28% and obese was 7%. A significant finding was that the majority of the students in the normal BMI range were females (55%) while only 45% were males. The predominantly obese students were found to be males. The consumption of vegetables and fruits were not as frequent as required, intake of junk foods was high, the physical activity was found to be inadequate among many students, a majority of students were found to skip breakfast. All these could potentially harm the physical and mental well-being of the students. The obese students were also found to be more lethargic when compared to the normal students. Medical college is the time when the students have to be very active physically and mentally. It is a phase where there is massive pressure on the students to do well, and to perform well sufficient energy is of impending importance. Awareness about the ill effects of obesity and underweight and has to be spread and the students should be encouraged to take care of themselves properly and not give in to the time constraint and the physical, mental stress impinging on them.

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#### Conflicts Of Interest

The authors declare no conflict of interest.

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