

Original Research Article

## Impact of lifestyle on weight and Body Mass Index of medical students studying in Guntur Medical College, Guntur.

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### Abstract

**Background:** Transition from high school to college among young adults can be a stressful lifestyle due to Urbanization, unhealthy eating patterns and reduced physical activity. Body mass index (BMI) is an important cardiometabolic parameter. **Aims and Objectives:** The present study aims to identify the prevalence of overweight and influence of lifestyle factors on BMI of medical students in Guntur Medical college, Guntur. **Materials and Methods:** It is a cross sectional study conducted among third semester students of Guntur medical college. Students were interviewed using predesigned and prestructured questionnaire. BMI was calculated based on height and weight of the students measured using stadiometer and weighing scale respectively.Data was entered and analyzed by using SPSS version 16.**Results:** A total of 195 students participated in the study out of which 127 were females and 68 were males. Overweight and obesity was found in 14.8%( 29) students and it is significantly more among junk food eaters and people who skip breakfast.

**Keywords:** Urbanization, overweight, physical activity

### Introduction

The burden of obesity has increased exponentially, affecting all socio-economical groups of both developed and developing countries, irrespective of age, sex and ethnicity in recent decades. This prompted WHO to describe obesity as an escalating global epidemic.<sup>(1)</sup>

In India, there is a nutritional from typical carbohydrate diet to fast food dietary habits, particularly young adults like medical students have been affected <sup>(2)</sup>. The causes of adult obesity include a variety of factors like diet, genetic predisposition, lack of physical activities and other behavioral factors.<sup>(3)</sup>

Mothers play a key role in developing a home environment that fosters healthful eating and physical activity among children and adolescents. Mothers shape their children's dietary practices activity, sedentary behaviors, and ultimately their weight status in many

ways.<sup>(4)</sup>Body mass index (BMI) is a cardio-metabolic parameter. It is the most commonly used parameter for assessing the overweight among the population.

The present study aims to identify the prevalence of overweight and obesity and the influence of lifestyle factors on body mass index of medical students in Guntur Medical college, Guntur.

### Methods & Materials

This was a cross sectional descriptive study which was undertaken among 6<sup>th</sup> semester undergraduate students of Guntur medical college. A total of one hundred and ninety five undergraduate medical students were recruited into the study by convenience sampling after obtaining verbal informed consent.

Anthropometric measurements of the subjects were taken using standard apparatus. The measurements included weight, height, waist and hip circumference. The weight was measured with calibrated standard electronic

weighing scale to the nearest 0.1 kg. Height was measured to the nearest 0.5 cm using a portable meter rule. Body mass index (BMI) was calculated as weight (kg) divided by the square of height (m<sup>2</sup>) and then categorized according to WHO recommendations to define underweight (BMI < 18.5), healthy weight(BMI,18.5-24.99), Overweight (BMI, 25.0 - 29.9) and obese (BMI > 30) individual.

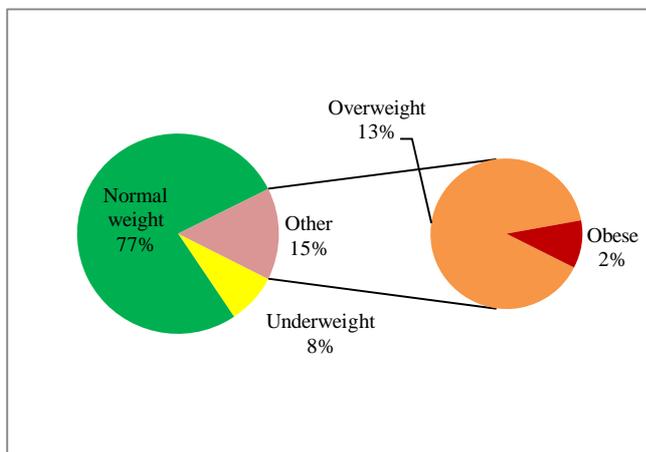
Data was entered and analyzed using SPSS version 16. In this study, both descriptive (percentage, mean and standard deviation) and inferential statistics were used to analyse the data. The Chi-square test was used to find out association between overweight/obesity characteristics and life style factors. All tests for statistical significance were two tailed and pvalue set at < 0.05.

**Results :**

This study comprises of 127 females and 68 males 195 with age ranging from 19-22Years. Mean BMI among the students is 22.09±2.87 among which male 21.66±2.63 and female is 22.32±2.97

Out of 195 study subjects, 16 (8.2%) were underweight, 150 (76.9%) were normal and 29 (14.9%) were considered as overweight/obese, of which 26(13.3%) were overweight and 3 (1.5%) were obese according to BMI. (Fig-1).

**Fig-1: Prevalence of Obesity based on BMI**



**Body mass index (BMI) and sociodemographic factors**

Among girls, 20 (15.7%) were overweight/obese compared to 9(13.2%) among boys. The difference was not statistically significant (chi square=1.087, p value=0.587)(Table-1). The prevalence of obesity increased significantly (P = 0.03) with the better educational status of the mother. Maternal occupation plays an important role in weight of the child. Overweight and obesity are found to be higher among students whose mothers are working(22.5%) and it is found to be statistically significant (p=0.034). Place of stay of the student has found to be not influencing the weight

patterns of the students as both the places have shown nearly 15% obesity (p=0.956)

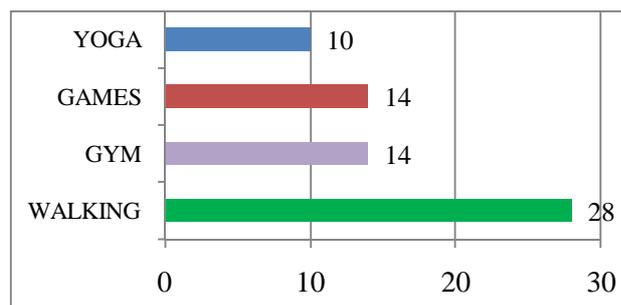
**Table-1: Body Mass Index (BMI) and Sociodemographic features**

PARAMETER	CATEGORY	UNDERWEIGHT	NORMAL WEIGHT	OVERWEIGHT AND OBESE	P VALUE
Gender	Male	4(5.9%)	55(80.9%)	9(13.2%)	0.587
	Female	12(9.4%)	95(74.8%)	20(15.7%)	
Maternal education	Primary and illiterate	2(4.5%)	34(77.3%)	8(18.2%)	0.039 (Significant)
	Secondary and inter	5(8.2%)	49(80.3%)	7(11.5%)	
	Graduate	9(11.2)	62(77.5%)	9(11.2)	
	Professional	0	5(50%)	5(50%)	
Maternal occupation	Housewife	13(10.5)	98(79%)	13(10.5%)	0.034 (Significant)
	Working mother	3(4.2%)	52(73.2%)	16(22.5%)	
Place of residence	Hostel	6(7.5%)	62(77.5%)	12(15%)	0.956
	Home	10(8.7%)	88(76.5%)	17(14.8%)	

**Body Mass Index and Lifestyle Factors:**

Of the participants who practice vegetarian diet, Underweight was 1(5.8%) , Normal weight 15(88.2%) , and Overweight only 1 (5.8%). Higher percentage (29,16.2%)of obesity was found in mixed diet students than that of vegetarians though tests of significance cannot be considered because of very less amount of vegetarians.( Table-2). Frequent skipping of breakfast is seen more in obese male (6,20.7%)and female (12,27.9%)students. The results are statistically significant among females(p value 0.016) only compared to male students(p value 0.265). Obesity and overweight are found to be higher among students taking junk foods more than thrice a week. Male (637.5%)and female14, 63.6%)and it is found to be statistically significant in both male(p value0.003) and female students(pvalue0.000). Overweight/obesity was found in 8,18.6% males and 18,20.9% females subjects who were not engaged in physical exercise (a minimum of 5 days in a week and 30 min/day).and is statistically significant both among male and female students(p value 0.05 and 0.065 respectively)

**Fig-2 Types of physical activity by students**



**TABLE-2 Body Mass Index and Lifestyle Factors**

VARIABLE	SEX	CATEGORY	UNDERWEIGHT	NORMAL WEIGHT	OVERWEIGHT AND OBESE	TOTAL	P VALUE
Diet	Male (N=68)	Vegetarian	0(0%)	5(100%)	0(0%)	5	1.276
		Mixed	4(6.3%)	50(79.4%)	9(14.3%)	63	
	Female (N=127)	Vegetarian	1(8.3%)	10(83.3%)	1(8.3%)	12	0.609
		Mixed	11(9.6%)	85(73.9%)	19(16.5%)	115	
Frequent skipping of breakfast	Male (N=68)	Yes	2(6.9%)	21(72.4%)	6(20.7%)	29	0.265
		No	2(5.1%)	34(87.2%)	3(7.7%)	39	
	Female (N=127)	Yes	5(11.6%)	26(60.5%)	12(27.9%)	43	<b>0.016</b> (Significant)
		No	7(8.3%)	69(82.1%)	8(9.5%)	84	
Junk food intake	Male (N=68)	<3times/wk	4(7.7%)	45(86.5%)	3(5.8%)	52	<b>0.003</b> (Significant)
		>3times/wk	0(0%)	16(100%)	6(37.5%)	16	
	Female (N=127)	<3times/wk	11(10.5%)	88(83.3%)	6(5.7%)	105	<b>0</b> (Significant)
		>3times/wk	1(4.5%)	7(31.8%)	14(63.3%)	22	
Physical activity	Male (N=68)	Yes	0(0%)	24(96%)	1(4.0%)	25	<b>0.05</b> (Significant)
		No	4(9.3%)	31(72.1%)	8(18.6%)	43	
	Female (N=127)	Yes	4(9.8%)	35(85.4%)	2(4.9%)	41	<b>0.065</b> (Significant)
		No	8(9.3%)	60(69.8%)	18(20.9%)	86	

Walking (28, 42%) is the activity opted by majority of the students among those who were doing regular physical activity(N=66)(Fig-2)In a study conducted by Goyal et al <sup>(10)</sup>it wasfound that the important influencing factors for overweight and obesity were low levels of physical activity and consuming junk foods.

**Discussion:**

The purpose of this study was to assess overweight and obesity rates among medical college students in Guntur medical college and to correlate their body weight status with sociodemographic and lifestyle factors. The current data demonstrated that 14.9% of the students were above the normal body weight. It is higher than that of the study conducted among medical undergraduates in Kancheevaram District(8.6%<sup>(5)</sup>) and New Delhi(11.7%<sup>(6)</sup>) and much lesser than that of the studies conducted among medical undergraduate students of Kerala(37.6%<sup>(7)</sup> , 25.7%<sup>(8)</sup>)

Overweight and obesity was found to be not significantly associated with gender of the student.Similarly no significant gender difference was found in study conducted among university students in Nigeria<sup>(9)</sup> .Maternal education and occupation was significantly increasing the obesity patterns of the students. Similar significance with maternal education and occupation was found in the study conducted in North India<sup>(10)</sup> .

Our results revealed that skipping breakfast was significantly correlated BMI among girls.similar findings were found in the study conducted by Bertone et al<sup>(11)</sup> and Amin TT et al<sup>(12)</sup>

In the present study, consumption of junk food or snacking is significantly associated with overweight/obesity as seen by various investigators<sup>(13),(14),(15)</sup> .

Our study found out a statistically significant association of decreased physical activity with overweight/obesity. Similar results were also seen in by Goyal et al <sup>(15)</sup>andGupta et al.<sup>(16)</sup>

**Conclusions**

Obesity is found to be nearly 15%among study subjects. Lack of exercise, consumption of junk food, were found to be highly prevalent risk factors of obesity in the study participants.Lifestyle modification is important to improve healthier habits earlier in life. Emphasis should be given to implementing interventions aimed at increasing physical activity and encouraging healthier diets among students thereby reducing their future risk of chronic diseases. Sports should be promoted, especially among women as many of them were found to be physically inactive. Nutrition education classes should be included in the curriculum to address the issue of malnutrition.

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