

**ASSESSMENT OF DIETARY HABITS AND LIFESTYLE OF THE MEDICAL STUDENTS OF AGARTALA GOVERNMENT MEDICAL COLLEGE**Shishir Kumar<sup>1</sup>, Anjan Datta<sup>2</sup>**HOW TO CITE THIS ARTICLE:**

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**ABSTRACT: INTRODUCTION:** Medical students represent a significant community investment and promoting their health preserves this investment. This study aims assessing the dietary habits and risky lifestyle behavior among the MBBS students. **MATERIALS AND METHOD:** A cross-sectional study was conducted among MBBS students of all four professional years of Agartala Government Medical College, Tripura, selecting in total 200 students (50 students from each year) through stratified random sampling method. Data was collected via a self-administered questionnaire and analyzed on SPSS (version 21) data sheet. **RESULTS:** The study population constitutes 64% male and 36% female students with mean age  $20.77 \pm 1.18$  years. The mean BMI for males was  $22.7 \pm 2.98$  and for females  $21.9 \pm 3.25$ , whereas 18.5% of all respondents were overweight. 11% of study population used to take food away from home/ mess more than 5 times a week. Also 69.5% of all students and 86.5% of the overweight students take junk food more than 5 times a week; about 2.5% students were smokers and 6.5% of students take alcohol. **CONCLUSION:** This study showed that more consumption of fast food and fatty food, academic stress and more prevalence to Pre-hypertension are the major lifestyle risky behavior among the MBBS students of this institute.

**KEYWORDS:** Dietary habits, medical students, lifestyle assessment.

**INTRODUCTION:** It is well known and documented that dietary habits and nutrition plays an important role in maintaining health and preventing diseases. The health of young people is critically linked to the health-related behaviors they choose to adopt.<sup>1</sup> The world health organization points out that 60% of the quality of an individual's health and life depends on his/her behavior and lifestyle.<sup>2</sup> Good health promoting behavior depends on the living habit adopted during early years. University students represent a major segment of the young adult population. Although, behaviors of students are considered a temporary part of college life, however, unhealthy habits picked up at this level generally persist in adult life.<sup>3</sup>

College life is an important stage for individuals as at this time their behaviors are conducive to change. Medical students are exposed to many risk factors that result from the peculiar ways of education and stressful environment during their courses and examinations, which may affect their psycho-social wellbeing.<sup>4</sup> Many health and health related problems may be encountered and are slightly prevalent among medical students. Weight problems, lack of physical activity, lack of sleep, the acquisition of new habits; such as smoking or drug use, difficulty in stress management and unhealthy dietary pattern are some examples of such problems.<sup>5</sup>

Healthy dietary habits among medical students are even more important as they are future physicians and the students who personally ignore adopting healthy lifestyle are more likely to fail to establish health promotion opportunities for their patients. Also, medical students have been shown to exhibit early risk factors for chronic diseases.<sup>6</sup>

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Adoption of poor health behaviors during young adulthood can increase the risk of several chronic diseases including obesity, type 2 diabetes, cardiovascular disease, and bone or joint complications.<sup>7</sup> This suggests that the period between the end of high school and the end of college is a critical time to intervene and educate young adults on the importance of developing and maintaining healthy behaviors.<sup>8</sup>

The university and college arenas represent the final opportunity for the health and nutrition education of a large number of students from the educator's perspective. A number of jurisdictions have attempted to undertake preventive programs to encourage physician health.<sup>9,10,11</sup> In addition, several medical schools have recognized that prevention of physician health problems should begin in the medical school and medical students should be given information and provided with tools to maintain good health along with their clinical studies.<sup>12,13</sup> Considering above viewpoints, this study was carried to assess the dietary habits and lifestyle behavior among the MBBS students of Agartala Government Medical College, in order to contribute to the development of health promotion programs designed specifically for them.

**MATERIALS AND METHODS:** This cross-sectional epidemiological study was conducted from 28<sup>th</sup> June to 26<sup>th</sup> July 2012 on 200 MBBS students to study the nutritional assessment of medical students. Using a stratified random sampling, 50 students were randomly selected from each year as strata. Only those students (male and female) were selected who gave the consent to participate in the study. Data was collected by a team of 18 MBBS students of 6<sup>th</sup> semesters posted in the department of Community medicine.

1. Anticipated population prop. =  $p = 50\%$  ( $=0.5$ ).
2. Type I error (5%) (i. e. confidence level =95%).
3. Precision required on either side of the proportion ( $=d$ ) =10% (i. e. between 10-20%) ( $=0.1$ ).

$$\text{Sample size: } n = \frac{Z^2_{1-\alpha/2} p(1-p)}{d^2} = \frac{4(p)(1-p)}{d^2} = \frac{4 \times 0.5 \times 0.5}{(0.1)^2} = 100$$

Minimum requirement of sample size for the study is 100 MBBS students from Agartala Govt. Medical College, Agartala. Annual intake in AGMC, Agartala is 100 students and we take the fifty students form each year for our study. Our study target was 200 students for more precise information regarding our objectives and equal distribution for each stratum.

A questionnaire was supplied to the students. Both, verbal and written consents were taken before including a student in the study. Strict confidentiality was maintained about the analyzed data. After filling up the questionnaire, students were examined by research group for height and weight. A general physical examination was also done to find out any underlying disease.

The questionnaire consisted of three different types of questions. The first group of questions was meant to calculate the daily calories intake. Students were asked to recall the food items and their amounts consumed in last 24 hours. The food items and their amounts were compared with the standard calorific value chart published by the National Institute of Nutrition. As medical students constitute sedentary worker group, their daily calories intake was compared with the standard intake for this group and inferences were made.

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The second group included questions on general food habits of medical students. Students were asked to report the food items they consumed generally and their frequency of consumption in a week. The third group of questions was meant to assess lifestyle of the students. Students were asked whether they did exercise or not and the duration of exercise in a week. This was compared with World Health Organization guidelines which emphasize on moderate level exercise for at least 150 minutes per week. Students were also asked about other aspects of lifestyle like sleep, outing, computer usage, religious activities and tobacco and alcohol consumption.

### Materials Used:

- Stadiometer: For measuring the height.
- Bathroom Weighing Scale: For measuring weight.

**Body Mass Index:** BMI is defined as the ratio of the weight of the person (in Kg) to that of the square of his/ her height in meters.

Categories what we have used in this study:

Underweight=  $BMI < 18.5$  ( $kg/m^2$ ).

Healthy weight =  $18.5 < BMI < 24.9$  ( $kg/m^2$ ).

Over weight =  $BMI > 25$  ( $kg/m^2$ ).

**DATA ANALYSIS:** Data were analyzed using SPSS (Version 21) and expressed in terms of proportions, mean and standard deviation.

**ETHICAL CONSIDERATION:** Ethical consideration was taken from Institutional Human Ethics Committee of AGMC.

**RESULTS:** This study showed that out of the total 200 participants 128 were males and 72 females; the mean age, for males was ( $20.84 \pm 1.16$ ) years and for females ( $20.63 \pm 1.215$ ) years, as shown in Table: 1.

Mean weight for males ( $62.67 \pm 8.616$ ) kg and females ( $52.24 \pm 7.445$ ) kg; mean height, males ( $166.16 \pm 5.661$ ) cm and females ( $154.56 \pm 5.295$ ) cm; whereas mean BMI for males was ( $22.709 \pm 2.987$ )  $kg/m^2$  and females ( $21.907 \pm 3.255$ )  $kg/m^2$ .

It is also found that out of the total 200 students 12% were underweight, 69.5% healthy and 18.5% were overweight according to their BMI status as showed in Table 2.

Table 3 shows the dietary habits of the students according to their BMI status. It was found that out of those students who had healthy weight, 87.8% of them took meal away from home <5 times a week and 10.8% of overweight students took meal away from home >5 times a week. 75.5% of all the students took fruits and vegetables >5 times a week which is a good habit among the students. But 43.5% of the students have been observed to take fatty foods (e. g., fatty meat, cheese, fried food, butter, whole milk, ice cream or egg etc.) and 69.5% of the students to take junk foods (e. g. samosa, puri, burger, pizza, sweets etc.)  $\geq 5$  time a week; whereas 94% of them were taking supplementary vitamins and minerals other than their daily routine food.

Various lifestyle habits have been shown on Table 4 according to the BMI status of the students, which reveals 125 out of 200 students were engaged in any or other sports, fitness or

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recreational activities. Most of them (101 out of 200) took sleep 7 to 8 hours a day, which is adequate. Also, 139 participants reported use of computer and 132 students watched television 1 hour or less in a day. Out of total 200 participants, 58, 53 and 36 students reported studying 1 hour or less, 2 hours and 3 hours a day respectively. Similarly 60, 43 and 46 students out of the total 200 mentioned hours spend in shopping by them is 1 hour or less, 1 to 2 hours and 2 to 4 hours a day respectively.

Out of the 200 participants 5 mentioned about smoking or taking tobacco, whereas 13 mentioned taking alcohol.

**DISCUSSION:** Our study reveals that 18.5% students (n=37) are overweight (21.1% male respondents and 13.9% female respondents). According to our study 12% students are under weight and among the underweight students in this study 10.2% are male and 15.3% female. We have also seen that males are more (21.1%) overweight than the females (13.9%). In our study 75.5% of the study subjects have taken fruits and green vegetables more than 5 times in a week. It has also been found that 43.5% of all students (48.6% of overweight students) take fatty foods more than 5 times in a week, somewhat higher by normal weight students (41%). Junk foods are taken by 69.5% of total students and by 86.5% overweight students as compared to 66.9% normal weight students >5 times a week.

Approximately 2.5% are smokers in our study population and 6.5% students take alcohol. Whereas, only 62.5% students are found to be engaged with regular physical exercise and only 19.5% students have slept 8 hours or more in a day.

Our study findings are more or less similar to the findings of the study conducted by Gopalakrishnan S et al<sup>14</sup> where 21.1% of the total respondents were overweight and 14.8% were underweight. A higher proportion of smokers was found in their study which is 14%, as compared to our present study.

In a similar study conducted by Anne O. Carter<sup>1</sup> et al,<sup>15</sup> they found that 14% of all students were underweight. In their study also they showed that males were likely to be more obese than female students (59.5% vs. 40.5%), which is consistent with our current study results. Smoking was reported among 3% of the students, almost similar to our study.

Shaimaa B. Abdelaziz et al<sup>16</sup> in a similar study showed that 30.5% of their study subjects consumed fruits and vegetables more than 5 times a week, which is quite less than our study findings. But in contrast to our study results, 74.6% of their study subjects took fatty foods more than 5 times a week. It may be due to difference in the nutritional pattern of our country and the gulf countries. In their study, they have also found among their study participants 10% were smokers and 25.3% were taking alcohol occasionally, which is quite higher than what we have found in the present study.

A possible explanation for the findings can be cultural variation between the countries. Shaimaa B. Abdelaziz et al<sup>16</sup> in their study have also found that 37.6% of the students used to take sleep 8 hours or more in a day which is quite less in case of our study participants, This may be due to the busy schedules of the students here.

Results similar to our study regarding regular physical exercise and alcohol consumption by the medical students were also shown by Kurubaran Ganasegeran et al<sup>17</sup> and Mahasti Alizadeh et al,<sup>18</sup> in their respective studies.

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**CONCLUSION:** We observed unhealthy behavior among the students of AGMC, although this is comparatively less than other areas. Weight problems especially overweight, lack of physical exercises, irregular life style and food habit are also better than the other areas. Excessive consumption of fatty and junk foods was prevalent among medical students of this institute. Therefore, health promotion efforts targeted toward first-year MBBS students is required because many are leading independent life choices for the first time. More attention towards recommended dietary pattern for the students has to be given. Students should include vegetables, fruits, and sprouted pulses in their daily diet, to avoid vitamins and minerals deficiency.

As demonstrated by this study, most of the students, in general, had healthy eating habits except in frequency of meals, fruit and vegetable consumption and consumption of fatty and junk foods. Nutritional education among medical students should be encouraged to promote healthier eating habits and lifestyles, as well as adherence to the healthier traditional food. This study also reveals that the prevalence of overweight among the students of this institute is similar to the findings of earlier studies conducted in India. Thus, the study reinforces the need to encourage healthy lifestyles, healthy food habits and a physically active daily routine, among the students, so that the dangers of the risks of developing chronic diseases earlier in life can be prevented.

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Variables	Male (n= 128) mean± SD	Female (n= 72) mean± SD
Age (years)	20.84±1.160	20.63±1.215
Weight (kg)	62.67±8.616	52.24±7.445
Height (cm)	166.16±5.661	154.56±5.295
BMI (kg/m <sup>2</sup> )	22.709±2.987	21.907±3.255

**Table 1: Demographic characteristic of study participants (n=200)**

Characteristics (Variables)	Under weight < 18.5 (kg/m <sup>2</sup> )	Healthy weight (18.5- 24.9) (kg/m <sup>2</sup> )	Over weight >25 (kg/m <sup>2</sup> )
Male (n=128)	13(10.2%)	88(68.7%)	27(21.1%)
Female (n=72)	11(15.3%)	51(70.8%)	10(13.9%)
Total (n=200)	24(12%)	139(69.5%)	37(18.5%)

**Table 2: Body Mass Index (BMI) status of medical students**



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Variables	Underweight N=24(100%)	Healthy weight N=139(100%)	Over weight N=37(100%)	Total N=200(100%)
<b>Taking meal away from home</b>				
<5times/week	23(95.8%)	122(87.8%)	33(89.2%)	178(89.0%)
≥5times/week	1(4.2%)	17(12.2%)	4(10.8%)	22(11%)
<b>Taking Fruits and Vegetables</b>				
<5times/week	6(25%)	36(25.9%)	7(18.9%)	49(24.5%)
≥5times/week	18(75%)	103(74.1%)	30(81.1%)	151(75.5%)
<b>Taking fatty foods</b>				
<5times/week	12(50%)	82(59%)	19(51.4%)	113(56.5%)
≥5times/week	12(50%)	57(41%)	18(48.6%)	87(43.5%)
<b>Taking Junk foods</b>				
<5times/week	10(41.7%)	46(33.1%)	5(13.5%)	61(30.5%)
≥5times/week	14(58.3%)	93(66.9%)	32(86.5%)	139(69.5%)
<b>Taking vitamin or mineral supplements</b>				
Yes	2(8.3%)	10(7.2%)	0(0%)	12(6.0%)
No	22(91.7%)	129(92.8%)	37(100%)	188(94.0%)
<b>Table 3: Dietary habits of medical students according to their BMI status</b>				

Variables	Under weight N=24	Healthy weight N=139	Over weight N=37	Total N=200
<b>Engagement with any sports/fitness/recreational activities</b>				
Yes	12(9.6%)	87(69.6%)	26(20.8%)	125(100%)
No	12(16.0%)	52(69.3%)	11(14.7%)	75(100%)
<b>Sleeps for how many hours in a day</b>				
3-4 hours	1(33.3%)	1(33.3%)	1(33.3%)	3(100%)
5-6hours	9(15.8%)	36(63.2%)	12(21.1%)	57(100%)
7-8 hours	13(12.9%)	74(73.3%)	14(13.9%)	101(100%)
More than 8 hours	1(2.6%)	28(71.8%)	10(25.6%)	39(100%)
<b>Use of computer in a day</b>				
1 hour or less	19(13.7%)	96(69.1%)	24(17.3%)	139(100%)
2hours	1(3.1%)	24(75.0%)	7(21.9%)	32(100%)
3 hours	1(6.3%)	12(75.0%)	3(18.8%)	16(100%)
4 hours	0(0%)	3(75.0%)	1(25.0%)	4(100%)
5 hours	3(60.0%)	1(20.0%)	1(20.0%)	5(100%)
6 hours or more	0(0%)	3(75.0%)	1(25.0%)	4(100%)
<b>Watching television in a day</b>				
1 hour or less	19(14.4%)	90(68.2%)	23(17.4%)	132(100%)
2hours	2(5.3%)	29(76.3%)	7(18.4%)	38(100%)
3 hours	2(11.1%)	12(66.7%)	4(22.2%)	18(100%)

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4 hours	0(0%)	4(100%)	0(0%)	4(100%)
5 hours	1(33.3%)	1(33.3%)	1(33.3%)	3(100%)
6 hours or more	0(0%)	3(60.0%)	2(40.0%)	5(100%)
<b>Study hours in a day</b>				
1 hour or less	5(8.6%)	40(69.0%)	13(22.4%)	58(100%)
2hours	8(15.1%)	38(71.7%)	7(13.2%)	53(100%)
3 hours	4(11.1%)	25(69.4%)	7(19.4%)	36(100%)
4 hours	2(8.0%)	18(72.0%)	5(20.0%)	25(100%)
5 hours	0(0%)	9(69.2%)	4(30.8%)	13(100%)
6 hours or more	5(33.3%)	96(60.0%)	1(6.7%)	15(100%)
<b>Hours spent in a day for shopping</b>				
1 hour or less	10(16.7%)	40(66.7%)	10(16.7%)	60(100%)
1-2hours	6(14.0%)	26(60.5%)	11(25.6%)	43(100%)
2-4 hours	3(6.5%)	34(73.9%)	9(19.6%)	46(100%)
4-6 hours	4(15.4%)	19(73.1%)	3(11.5%)	26(100%)
6-8 hours	0(0%)	8(72.7%)	3(27.3%)	11(100%)
8 hours or more	1(8.3%)	11(91.7%)	0(0%)	12(100%)
Total	24(12.0%)	139(69.5%)	37(18.5%)	200(100%)
<b>Students who are smoking or taking tobacco</b>				
Yes	2(40%)	2(40%)	1(20%)	5(100%)
No	22(11.3%)	137(70.3%)	36(18.5%)	195(100%)
<b>Students who are taking Alcohol</b>				
Yes	3(23.1%)	6(46.2%)	4(30.8%)	13(100%)
No	21(11.2%)	133(71.1%)	33(17.6%)	187(100%)

**Table 4: BMI status assessments of the respondents according to lifestyle**

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