



“A STUDY ON PREVALENCE OF OBESITY AMONG MBBS THIRD PROFESSIONAL (PART-II) STUDENTS IN A PRIVATE MEDICAL COLLEGE OF ELURU DISTRICT”

Community Medicine

**Dr Bodapati
Neeraj***

Intern, Asram Medical College, Eluru, Andhra Pradesh. *Corresponding Author

**Dr Reshma Sri
Matthi**

Intern, Asram Medical College, Eluru, Andhra Pradesh.

ABSTRACT

Background: Obesity is an upcoming emergency lifestyle disease in our country, especially among young adults. In India, morbidity and mortality occurs even with low body mass index (BMI). There has been steady increase in obesity among adolescents and young adults. **Materials and Methods:** It was an institutional based analytical cross-sectional study done on 120 Students studying MBBS Third Professional (Part-II) Students for duration of 30 days. Height and weight of the students were measured using a measuring tape and digital weighing machine respectively. A pre designed, semi structured questionnaire were used for collecting data after validating the questionnaire. **Results:** Among 120 students enrolled in study, 34.2% were male and 65.8% were female. Overall prevalence of overweight and obesity is 64.2%. Majority (67.5%) of them had normal waist circumference. In gender category, females had more BMI compared with males. We found statistically significant association with gender, family history, diet pattern, fruits intake, mobile usage. **Conclusion:** The result of the study revealed that prevalence of obesity was 64.2% among Third professional year part 1 medical students of ASRAM Medical College, Andhra Pradesh. The prevalence of obesity was higher among boys compared with girls. Positive family history was found in our study. So persons with positive family history should be counselled to follow healthy lifestyle.

KEYWORDS

MBBS Third Professional (Part-II) Students, Obesity, Prevalence.

INTRODUCTION:

Obesity can be noted as the initial wave of a defined group of non-communicable diseases called “new world syndrome,” generating a huge socioeconomic and public health burden in low and middle income countries. [1]It is highly possible for to preserve when its beginning is in late childhood or adolescence.[2] Obesity are defined as abnormal accumulation of fat in the body. According to the WHO, body mass index (BMI) more than 30 is considered as obesity.[3] The prevalence of obesity in India lies between 10% and 50%.[4]

The main cause for obesity in Indians is nutritional shift from typical carbohydrate diet to high calorie fast food which is more common among college students. [5] The professional students, including medical students are in high risk side when obesity is concerned. This is mainly because of the modernisation and industrialisation which has lead to sedentary lifestyle and unhealthy eating pattern. Obesity is well known risk factor for diabetes mellitus, hypertension, hyperlipidemia, hyperinsulinaemia, stroke and early atherosclerosis non- alcoholic fatty liver disease, gall stones and osteoarthritis.[6].Medical profession is synonymous with long duty hours; erratic food timings and exposure to host of stressful situations which put medical students at risk of develop lifestyle associated disorders including obesity. [7].According to recent ICMR STUDY 2015, the prevalence of generalised obesity and central obesity among young adults range from 11.8% to 31.3% and 16.9% to 36.3%, respectively. Studies from central and South India have shown 9.4% to 38% prevalence of obesity among MBBS students. [8] Many studies have proved high prevalence of obesity among medical students in India. [9]

AIMAND OBJECTIVES:

- 1) To study the prevalence of obesity among MBBS Third Professional (Part-II) students
- 2) To find the association between obesity and various risk factors

MATERIALSAND METHODS:

Type of study: An analytical cross-sectional study

Study period: 30 days(16th February 2023 to 17th march 2023)

Study Area: Study was conducted in ASRAM MEDICAL COLLEGE, Eluru district.

Study Population: MBBS students of 2019 -2020 batch of ASRAM MEDICAL COLLEGE (MBBS Third Professional {Part-II} students)

Sample size: 120.

Sampling technique: Universal sampling technique

Study tool:

Height and weight of the students were measured using a measuring tape and digital weighing machine respectively. A pre designed, semi structured questionnaire were used for collecting data after validating the questionnaire

- **Inclusion criteria:** Students who were willing to participate and give consent were included
- **Exclusion criteria:** Students who were absent during the study period were excluded
- **Ethical issues:** Permission from institutional ethics committee was obtained prior to start of study. An informed consent was taken from the study subjects after thorough explanation about purpose of the study
- **Data collection:** Prior to data collection, an elaborate briefing about the purpose of the study was done to study subjects by self administered questionnaire. Height and weight of the subjects were measured after standardization of scales
- **Data Analysis:** The collected data was entered in Microsoft excel 2007 and analysed by using SPSS Software 26 trial version. Results were represented in the form of tables. Chi square test was done to know the association between the categorical variables

RESULTS:

TABLE 1: Showing the distribution of socio-demographic profile and risk factors of study subjects

		Count	Column N %
AGE GROUP	20-21 YEARS	50	41.7%
	22-23 YEARS	70	58.3%
GENDER	MALE	41	34.2%
	FEMALE	79	65.8%
FAMILY	NUCLEAR	103	85.8%
	JOINT	17	14.2%
FATHER EDUCATION	LITERATE	113	94.2%
	ILLITERATE	7	5.8%
MOTHER EDUCATION	LITERATE	111	92.5%
	ILLITERATE	9	7.5%
MODIFIED B.G.PRASAD CLASSIFICATION	GRADE 1	111	92.5%
	GRADE 2	6	5.0%
	GRADE 3	2	1.7%
	GRADE 4	0	0.0%
	GRADE 5	1	0.8%

PLACE OF STAY	HOSTEL	92	76.7%
	DAY SCHOLAR	28	23.3%
FAMILY HISTORY OF OBESITY	PRESENT	37	30.8%
	ABSENT	83	69.2%
DIET	VEGETARIAN	10	8.3%
	MIXED	110	91.7%
PHYSICAL ACTIVITY	PRESENT	55	45.8%
	ABSENT	65	54.2%
JUNK FOOD INTAKE	YES	118	98.3%
	NO	2	1.7%
SOFTDRINK INTAKE	YES	94	78.3%
	NO	26	21.7%
FRUITS INTAKE	YES	110	91.7%
	NO	10	8.3%
MOBILE USAGE	< 5 HOURS	80	66.7%
	≥ 5 HOURS	40	33.3%
SITTING LYINGTIME	< 6 HOURS	35	29.2%
	≥ 6 HOURS	85	70.8%
APP USAGE	YES	11	9.2%
	NO	109	90.8%
SLEEP DUARTION	< 7 HOURS	50	41.7%
	≥ 7 HOURS	70	58.3%
LASTMEAL BEFORE DINNER	< 3 HOURS	59	49.2%
	≥ 3 HOURS	61	50.8%
BMI	UNDER WEIGHT	6	5.0%
	NORMAL	37	30.8%
	OVER WEIGHT	23	19.2%
	OBESE 1	45	37.5%
	OBESE 2	9	7.5%
BMI	< 23	43	35.8%
	≥ 23	77	64.2%
WAIST CIRCUMFERENCE	NORMAL	81	67.5%
	ABNORMAL	39	32.5%

Among 120 students enrolled in study, 34.2% were male and 65.8% were female. And majority of them belong to nuclear family (85%) and 92.5% belong to modified B.G. Prasad grade 1 socio-economic status. Only 45.8% does physical activity at least 30 minutes for 5 days a week. Only 33.3% of them use mobile phones for more than 5 hours. Overall prevalence of overweight and obesity is 64.2%. Majority (67.5%) of them had normal waist circumference.

Table: 1 –Showing the association between BMI and various factors.

Variable		BMI		TOTAL	P value
		<23	≥ 23		
Age group	20-21 years	20(46.5%)	30(38.9%)	50 (41.7%)	0.647
	22-23 years	23(53.5%)	47(61.1%)	70 (58.3%)	
Gender	Male	8(18.60%)	33(42.85%)	41 (34.2%)	0.007*
	Female	35(81.39%)	44(57.14%)	79 (65.8%)	
Family	Nuclear	36(83.72%)	67(77.01%)	103 (85.8%)	0.620
	Joint	7(16.27%)	10(11.494 %)	17 (14.2%)	
Father Education	Literate	42(97.67%)	71(92.20%)	113 (94.2%)	0.221
	Illiterate	1(2.32%)	6(7.79%)	7(5.8%)	
Mother Education	Literate	41(95.34%)	70(90.90%)	111(92.5 %)	0.376
	Illiterate	2(4.65%)	7(9.09%)	9(7.5%)	
B.G Prasad	Grade -1	39(90.69%)	72(93.50%)	111 (92.5%)	0.243
	Grade -2	2(4.6%)	4(5.19%)	6(5%)	
	Grade -3	2(4.6%)	0(0%)	2(1.7%)	
	Grade -4	0(0%)	0(0%)	0(0%)	

	Grade -5	0(0%)	1(1.29%)	1(0.8%)	
Stay	Hostel	31(72.09%)	61(79.22%)	92 (76.7%)	0.376
	Day scholar	12(27.90%)	16(20.77%)	28 (23.3%)	
Family History	Present	3(6.97%)	34(44.15%)	37 (30.8%)	0.000*
	Absent	40(93.02%)	43(55.84%)	83 (69.2%)	
Diet	Vegetaria n	1(2.32%)	11(14.28%)	12 (10.0%)	0.036*
	Mixed	42(97.67%)	66(85.71%)	108(90.0 %)	
Physical Activity	Present	16(37.20%)	39(50.64%)	55 (45.8%)	0.157
	Absent	27(62.79%)	38(49.35%)	65 (54.2%)	
Junk Food Intake	Yes	42(97.67%)	76(98.70%)	118 (98.3%)	0.674
	No	1(2.32%)	1(1.29%)	2(1.7%)	
Soft Drink	Yes	34(79.06%)	60(77.92%)	94 (78.3%)	0.884
	No	9(20.93%)	17(22.07%)	26 (21.7%)	
Fruits Intake	Yes	43(100%)	67(87.01%)	110 (91.7%)	0.014*
	No	0(0%)	10(12.98%)	10(8.3%)	
Mobile Usage	< 5 hours	34(79.06%)	46(59.74%)	80 (66.7%)	0.031*
	≥ 5 hours	9(20.93%)	31(40.25%)	40 (33.3%)	
Last Meal	< 3 hours	18(41.86%)	41(53.24%)	59 (49.2%)	0.232
	≥ 3 hours	25(58.13%)	36(46.75%)	61 (50.8%)	

In gender category, females had more BMI compared with males. We found statistically significant association with gender, family history, diet pattern, fruits intake, mobile usage. We found statistically no significant association with Age group, type of Family, Father & Mother Education, Modified B.G.Prasad classification, Place of Stay, Physical Activity, Junk Food Intake, Soft Drink, Last Meal before sleep.

DISCUSSION:

In our study among 120 students, 81(67.5%) students are obese and overweight and 39(32.5%) were either normal weight or underweight.

In our study 80.5% of male students and 55.7% of female students are obese compared to study done by SreeM.S, Dampetla S. in which there is 20% of male students and 15.15% female students have combined obesity [10].The difference may be because we mainly considered Asian classification of BMI whereas they took it as combined obesity of both BMI and waist circumference.

In the present study there is significant association between family history of obesity and prevalence of obesity. Similar association was found in study conducted by Kevin Fernandez et al.[11]where the prevalence of obesity and overweight was 13.2%

In the present study there is statistical significance between frequency of vegetables and fruits intake and prevalence of obesity similar results were found in study conducted by M.Basu et al. [12] where the obesity prevalence was 28% and overweight prevalence is 20% according to Indian scale.

In the present study there is significant association between increased mobile usage and obesity, similar association is seen in study conducted by A.Sulania where 21% were overweight and 5% were obese according to WHO scale [13]

In our study there is no significant association between place of stay and prevalence of obesity. Similar results were found in Study conducted by M.Anupama et al. [14] where prevalence of overweight is 14.5% and obesity was 1.5% according to WHO classification.

In our study there is no significant association between frequency of eating junk food and obesity. Similar results were found in study conducted by M.Anupama et al. [14]

In our study there is no significant association between frequency of soft drink consumption and obesity. Similar results were found in study conducted by M.Anupama et al [14] where prevalence of overweight is 14.5% and obesity was 1.5% according to WHO classification.

In our study there is significant association between frequency of meat consumption and obesity. Similar results were obtained in study conducted by Y Wang et al. [15].

In our study there is no significant association between socioeconomic status and obesity but there is significant association in many other studies like study conducted by Kevin Fernandez et al.[11] where the prevalence of obesity and overweight was 13.2%

CONCLUSION:

The result of the study revealed that prevalence of obesity was 64.2% among Third professional year part 1 medical students of a ASRAM MEDICAL COLLEGE, Andhra Pradesh. The prevalence of obesity was higher among boys compared with girls. Positive family history was found in our study. So persons with positive family history should be counseled to follow healthy lifestyle. In our study there is significant association between frequency of vegetables fruits and meat intake and prevalence of obesity, so, students should be counseled to take more vegetables and fruits and less meat. In our study there is significant association between mobile usage and prevalence of obesity, so, students should be motivated to decrease their screen time and spend more time in physical activity.

REFERENCES:

1. World Health Organization. Obesity: Preventing and Managing the Global Epidemic. Technical report series No.894, Geneva: WHO,2000.
2. Freedman DS, Burke GL, Harsha DW, Srinivasan SR, Crescenta JL, Webber LS, et al. Relationship of changes in obesity to serum lipid and lipoprotein changes in childhood and adolescence. *JAMA* 1985;254:515-520.
3. World Health Organization. Fact sheets, Obesity and overweight. Geneva: World Health Organization. Available from: https://www.who.int/health-topics/obesity#tab=tab_1 [last accessed on 2023 Feb]
4. Poobalan A, Alcott L. Obesity among young adults in developing countries: A systematic overview. *CurrObes Rep* 2016;5:2-13.
5. Dental MK, Ranganathan U, Akarte SV. Prevalence of overweight and obesity among medical students and their knowledge, attitude and practice about obesity. *Int J Sci Res* 2015 ;1:74-9.
6. Abdelaal M, le Roux CW, Doherty NG. Morbidity and Mortality associated with obesity. *Ann Transl Med*. 2017 Apr;5(7):161. doi: 10.21037/atm.2017.03.107. Review. Pub Med PMID: 28480197; Pubmed Central PMCID: PMC5401682 [PubMed].
7. Verma K, Goyal S. Stress leading to overweight/obesity in First MBBS hotelier girls. *Int J Collab Res Intern Med Public Health*. 2012;4(6):924-33.
8. Kamath S, Souza J D. Prevalence of obesity among the medical students: a cross sectional study in South Indian medical college. *Al Ameen J Med Sci*. 2013;6(1): 93-95.
9. Abbate A, Giorrianni C, Munao F. Evaluation of obesity in Healthcare workers. *Med Lav* 2006; 97:13-9.
10. SanthiSree M, SrujanaDampetla. Burden of combined obesity among students of a medical college in Guntur city of Andhra Pradesh. *Public Rev Int J Public Health Res*. 2019;6(3):105-111.
11. Fernandez K, Singulair SA, Kshirsagar M, Pathan Y. Study regarding overweight/obesity among medical students of a teaching hospital in Pune, India. *Med J DY Patil Univ* 2014;7:279-83.
12. Basu M, Sarkar K, Shahbabu B, Ray S, Barik G, Chatterjee S and Misra RN: Pattern and Determinants of overweight and obesity among medical students of Kolkata. *Int J Pharm Sci Res* 2016;7(1):377-86. Doi: 10.13040/IJPSR.0975-8232.7(1).377-86.
13. Sulania A, Setu Y, Goel SK. Determinants of obesity among medical college students of Delhi- a cross sectional study. *Indian J Nutri*. 2021;8(1):222.
14. Anupama M, Iyengar K, Rajesh SS, Rajanna MS, Venkatesh P, Pillai G. A study on prevalence of obesity and lifestyle behaviour among medical students. *Int J Community Med Public Health* 2017; 4:3314-8.
15. Y Wang, MA Beydoun. Meat consumption is associated with obesity and central obesity among US adults. *Int J Obes (Lond)*. 2009 Jun; 33(6):621-628. doi:10.1038/ijo.2009.45.