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Original Article

Assessment Of Obesity In Medical Students Of Guru Gobind Singh Medical College Faridkot

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ABSTRACT
Background: The epidemic of obesity is a substantial health burden worldwide. The problem is of a larger magnitude in developing countries like India where a significant proportion of population belongs to younger age group. So, this study was planned to assess the health status of Medical students in terms of BMI and determine the association of obesity with age and gender. **Aims & Objectives**: To study the health status of medical students in terms of overweight and obesity. **Material & Methods**: A cross-sectional survey using a questionnaire, anthropometric measurements, was conducted in April 2017 on 289 medical students at GGS Medical College, Faridkot. Weight (in kgs) and height (in cms) were recorded. The data was entered in MS Excel 2007 and analysed using SPSS version 20. **Results:** The study population was 289 (55.7% males and 44.3% females), aged 19-21 years (mean 18.8 ± 0.757 years) In the present study, overall 35.3% students were found to be overweight and obese. Among males, 47.8% were overweight or obese while among females, 19.5% were overweight or obese. (p=0.000) The association of BMI status of students with age was found to be highly significant. (p=0.000) **Conclusion:** Overweight and obesity was high among Medical students. It was found to be significantly associated with age and gender.

Keywords: Obesity, Medical Students, BMI, Age, Gender

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INTRODUCTION

Worldwide, obesity trends are causing serious public health concern. It is an independent risk factor for cardiovascular diseases and significantly increases the risk of morbidity and mortality. Childhood obesity affects both developed and developing countries of all socio-economic groups, irrespective of age, sex or ethnicity. It has been estimated that worldwide over 22 million children under the age of 5 are obese, and one in 10 children is overweight. [1] Aetiopathogenesis of childhood obesity is multi-factorial and includes genetic, neuroendocrine, metabolic, psychological, environmental and socio-cultural factors. Many co-morbid conditions like metabolic, cardiovascular, psychological, orthopedic, neurological, hepatic, pulmonary and renal disorders are seen in association with childhood obesity. The treatment of overweight and obesity in children and adolescents requires a multidisciplinary approach with a holistic outlook. The team should include a paediatric physician, nurse practitioner, dietician, physical instructor, behavioural therapist and a social worker in addition to a motivated team of parents, caretakers, teachers and policy makers. The immediate goal is to bring down the rate of weight gain, followed by a period of weight maintenance and finally weight reduction to improve BMI. The long-term goal is to improve quality of life and reduction in morbidity as well as mortality associated with overweight and obesity.[2] Community level interventions include advocacy to increase physical activity at schools and at home through the creation of environments that support physical activity. These efforts could include creation and maintenance of parks, inclusion of child friendly walking and bicycle paths as well as creating awareness about locally available physical activity options. At the physician's level it is essential to engage families with parental obesity or diabetes, because these children are at increased risk for developing obesity later in life. [3-4] Aim of the present study to assess the obesity and overweight status among medical students.

MATERIAL & METHODS

The study was a cross sectional type of study conducted among MBBS students of first, second and 3rd professional of GGSMC, Faridkot. The study period was one month. The information was

collected in a predesigned pre-tested proforma by interviewing the students after taking written consent from them. It was completely based on voluntary participation and they were free to withdraw from the study at any point or stage. Before administering the questionnaire, the nature of the study was explained to the students. The total strength of three MBBS professionals is about 300. Considering a non-response rate of 10%, minimum sample size of 270 students was calculated. However, data was collected from 289 students. The data entry was done in MS Excel 2007 and it was analysed using SPSS version 20.The students were classified as under according to Asian classification of BMI: [5]

Underweight	< 18.5
Normal Weight	18.5 – 22.9
Overweight	23.0 – 24.9
Obese	>25

The study was conducted after obtaining informed & written consent of the students for the participation. An approval from ethical committee of the institute was obtained.

RESULTS

A total of 289 students participated in our study. Majority of students in our study 49.1% were 19 years old , followed by 18 years(33.9%),20 years (14.2%) and least were 21 years old constituting only 2.8%. Mean age of participants were found to be 18.86 ± 0.757

Table 1. Distribution of subjects according to age

Age (years)	No.	Percentage
18	98	33.9
19	142	49.1
20	41	14.2
21	8	2.8
Mean	18.86 ± 0.757	

Among 289 students 161(55.7%) were males and rest 128 (44.3%) were females.

Table 2. Distribution of subjects according to gender

Gender	No.	Percentage
Male	161	55.7
Female	128	44.3
Total	289	100

On calculating the BMI of students it was found that majority had normal BMI. 31.1% were overweight and 4.2% were obese.

Table 3. Distribution of subjects according to BMI Status

BMI Status	No.	Percentage
Underweight	0	0
Normal	187	64.7%
Overweight	90	31.1%
Obese	12	4.2%
Total	289	100.0%

Among 90 overweight students majority were males (85.6%) and rest (14.4%) were females. Among 12 obese students all of them were females. Chi square reveals that p value is 0.000 which is highly significant.

Table 4. Distribution of subjects w.r.t. BMI status and gender

BMI Status	Males	Females
Normal (187)	84(44.9%)	103(55.1%)
Overweight (90)	77(85.6%)	13(14.4%)
Obese (12)	0	12(100%)
Total (289)	161(55.7%)	128 (44.3%)

χ^2 = 56.4, df=2, p= 0.000, Highly significant.

Among 90 overweight students, majority belonged to age group of 19 yrs (57.8%), rest 2.2% belonged to 20 yrs age group and 3.3% belonged to 21 yrs. All 12 obese students (100%) belonged to 19 yrs age group. The association of BMI status of students with age was found to be highly significant. (p=0.000)

Table 5. Distribution of subjects w.r.t. BMI status and age

BMI Status	18 yrs	19 yrs	20 yrs	21 yrs
Normal (187)	65 (34.8%)	78 (41.7%)	39 (20.9%)	5 (2.7%)
Overweight (90)	33 (36.7%)	52 (57.8%)	2(2.2%)	3 (3.3%)
Obese (12)	0	12 (100%)	0	0
Total (289)	98 (33.9%)	142 (49.1%)	41(14.2 %)	8 (2.8%)

χ^2 = 31.183, df=6, p= 0.000, Highly significant.

DISCUSSION

Many countries in South-East Asia including India are going through an economic and nutrition transition.[6] The nutrition transition is associated with a change in dietary habits, decreasing physical activity and rising prevalence of obesity.[7] Overweight and obesity are major risk factors for a number of chronic diseases, including diabetes, cardiovascular diseases and cancer. Obesity in children and adolescents is gradually becoming a major public health problem in many developing countries, including India.[8] One-half of obese children become obese adults. In the present study, 31.1% and 4.2% students were found to be overweight and obese respectively. (Table 3) However, Mahajan *et al* (2011) reported the prevalence of overweight and obesity as 4.98% and 2.24% respectively.[9] A similar study among adolescents in Hyderabad[10] reported prevalence of overweight of 7.2%. According to Mouzan *et al*, the overall prevalence of overweight, obesity and severe obesity in all Saudi children and adolescents was 23.1%, 9.3% and 2%, respectively.[11] In the present study, among males 47.8% were overweight or obese while among females, 19.5% were overweight or obese. According to Mahajan *et al,* higher prevalence of overweight and obesity was seen among females in all the regions of Puducherry.[9] In the present study, the difference in BMI status with respect to gender was found to be highly significant. (p=0.000) (Table 4) Obesity was seen predominantly in females. However, according to Prasad *et al,* there was no difference in prevalence between males and females.[12] Booth *et al* reported that among Australian adolescents, the overweight and obesity prevalence increased significantly among boys but not among girls over the period 1997–2004.[13] In the present study, the difference in BMI status with respect to age was found to be highly significant. (p=0.000) (Table 5) According to Prasad *et al,* the prevalence of overweight/obesity increased as the age advanced.[12]

CONCLUSION

Overweight and obesity was high among Medical students. It was found to be significantly associated with age and gender.

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