Life style and obesity among college students in Chandigarh

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ABSTRACT: *Obesity being a preventable risk factor for Non Communicable Diseases (NCD) needs to be measured in college students, as they undergo transition from adolescence to adulthood and are more likely to adopt lifestyles promoting weight gain. The present study was carried out to find out the burden of overweight/ obesity and associated lifestyle factors among college students Chandigarh. Data was collected by self administered questionnaire enquiring family history of NCD, food habits and physical activity. Body Mass Index (BMI) and Waist circumference (WC) was measured to estimate burden of overweight /obesity. Nearly half (44.9%) of the students were either overweight or obese. As per recommended WC cut off points (≥78cm –men, ≥72cm-women) and action level one for Indians, 68% students had central obesity. All most all (>90%) were frequent fast food eaters, eat between meals and not interested in regular physical activity. C Higher prevalence of obesity especially central obesity among college students is alarming. If they continue their unhealthy food habits and physical inactivity they are likely to develop lifestyle diseases at an early age. Timely identification and correction of lifestyle is recommended to prevent obesity among students.*

Key Words: : *Body Mass Index (BMI), Waist circumference (WC), college students, overweight, obesity, lifestyle*

INTRODUCTION

Nationally representative surveys have shown rising trend of overweight and obesity in developing countries. Economic development, increased availability and consumption of food, changes in lifestyle and increased urbanization are contributing further to increase the burden of obesity in India. The burden of obesity is more inurban areas and affecting young adults and children . Especially college students are highly vulnerable to obesity as living away from home, transitioning to independent living and are thus making their own food choices, irregular routines and attracted to new lifestyle, which often results in imbalanced diet . Since there is paucity of evidences on burden of obesity and prevailing lifestyle patterns among young adults in India, the present small scale study was carried out to find out the burden of overweight and obesity among college students in 18-25 years age group in Chandigarh city.

METHODS

The present study was conducted in the Govt. College -46 chandigarh. reported 13% and 9% prevalence of overweight/ obesity among women and men respectively 4 and thus a sample size of 138 students was estimated with anticipated prevalence of 11%, at 95% confidence level and absolute precisionof 5%. All the available students attending classes in the college were included in the study. A predesigned and self administered questionnaire was used to collect the data on personal information,family history of hypertension, diabetes mellitus, heart disease and obesity, anthropometric measurementsto calculate Body Mass Index (BMI) and Waist circumference, physical activity and food habits of the students. Students were categorized as normal, overweight and obese according to revised guidelines 5. Waist circumference cut off of ≥78cm for men and ≥72cm for women for action level 1 were used to calculate prevalence of central obesity as per recommended guidelines.

RESULTS

Total 138 students, 78 (56.5%) girls and 60(43.5%) boys participated in the study with mean age of 18.65 ±1.14. Mean weight, height and BMI were 61.6 kg (sd-13.6), 166.1 cm (sd-10.5) and 22.23 kg/m2 (sd-3.5) respectively. Male had slightly higher BMI but the difference was insignificant. 17.4% were underweight (BMI≤18.5), 37.7%normal (BMI-18.5-22.9), 15.9% were overweight (BMI-23-24.9) and 29% obese (BMI≥25). Total 44.9% students were overweight /obese with higher prevalence among males as compared to females (46.7% vs. 43.6%).

Table 1: Prevalence of obesity according to characteristics of students

Characteristics	N-138	0BESE->23(%)	NON OBESE<23(%)	P- Value
Sex				0.733
F	**78**	**44(56.4)**	34 (43.6)	
M	**60**	**32(53.3)**	28 (46.7)	
Family h/o Hypertension				
Yes	**64**	**24(54.5)**	20 (45.5%)	1.0
No	**94**	**52(56.3)**	42 (44.7%)	
Family h/o Diabetes mellitus				
Yes				0.012*
No	**38**	**14(36.8)**	24 (63.2%)	
	100	62(62.0)	38 (38.0%)	
Family h/o Heart disease				
Yes	**20**	8(40.0)	12 (60.0%)	
No	**118**	68(57.6)	50 (42.4%)	0.154
Family h/o Obesity				
Yes	**24**	8(33.3)	16 (66.7%)	0.024*
No	**114**	68(59.6)	46 (40.4%)	
Diet				
Weekly fasting	**16**	10(62.5)	06 (37.5%)	0.600
Non fastig	**122**	66(54.1)	56 (45.9%)	
Physical activity				
Yes	**94**	66(54.1)	40 (42.6%)	0.465
No	**64**	22(50.0)	22 (50.0%)	

Mean waist circumference was 79.82 (sd-12.5) cm and prevalence of central obesity was higher among boys as compared to girls (80% vs 59%) as per recommended cutoffs for action level 1 (≥78cm for men and ≥72cm for women). Prevalence of isolated central obesity was 36.17% and was more prevalent in boys (41.7% vs 26.1%). Overweight was more among those who had family history of hypertension, diabetes mellitus, heart disease and obesity and less among those who observe weekly fasting and doing moderate physical activity. Family history of diabetes and obesity were found to be associated significantly ($p<0.05$) with obesity (Table1). All most all (94.2%) were frequent fast food eaters (more than once a week), had habit of eating between meals (92.8%) and the most favorite fast food was pizza/burger (45%) followed by noodle/chowmin (16%) and samosa/ kachori (9%), together amounting to 70% . Only 6 (4.3%) students reported sports as their favorite spare time activity rest all reported activities like listening music (27.5%), reading (17.4), chatting (15.9%), watching television (14.5%), internet (7.2%), painting (4.3%), playing computer games (2.9%), and other (5.8%) as their spare time activities.

DISCUSSION

The study shows that nearly half (44.9%) of the students were either overweight(15.9%) or obese (29%). M. Deepa et al (2009) and Thakkar et al (2009) had reported similar prevalence(45.9% & 42.5%) using same cut off for BMI (≥23kg/m2) 7,8. Other studies from elsewhere inIndia reported prevalence ranging from 10%- 56% for different age groups, populations andgender2,4. Studies reported that waist circumference is the better measure of obesity as it is thebetter predictor of metabolic risk factors and prevalence of central obesity reflects the risk ofdeveloping diseases more precisely . The prevalence of central obesity is even more alarming inthe present study as 68% students had waist circumference above action level 1, crossingwhich is likely to coincide with occurrence of at least one lifestyle disease such as cardiovasculardiseases and diabetes mellitus . Prevalence of central obesity reported by other studies is lowerthan this study 7 as this study has used the updated recommendation for waist circumference cut off levels of ≥78cm for men and ≥72 cm for women. Most Indian studies used waist circumference cut off levels ≥90cm for men and 80cm for women for detection of central obesity but lower cut off levels (≥78cm for men and ≥72 cm for women) are suggested to detect central obesity earlier in life with an aim to prevent obesity with lifestyle changes like diet and physical activity. Beyond this level metabolic risk factors for cardiovascular diseases appear and

require management under medical supervision. Evidences suggest higher prevalence of central obesity among women but this study reported higher prevalence of central obesity among boys (80% vs 59%) which may be because of the difference in the age of the study participants.

As this study includes young students, especially girls at their young age are moreconscious about looks and afterwards tend to become centrally obese possibly due to advancingage, pregnancies, and restrictions on physical activities after marriage or they don't find timeto look after themselves. history of hypertension, diabetes, heart disease and obesity was present in 31.9%, 27.5%, 14.5% and 17.4% students respectively which further increases the risk of developing diseases. This study also found that lifestyle of students is favorable for gaining weight as most of them are frequent fast food eaters (94.2%), eating between meals (92.8%) and only few (4.3%) take interestin physical activity. A study among urban adolescents had also reported higher prevalence ofunhealthy behavior which includes frequent consumption of outside food (42%), low fruit andvegetable intake (58%), physical inactivity (45%) and spending time in sedentary activities likewatching television and playing computer games (41%) 9. College years are very crucial in shapingadult behavior. Timely identification and correction of food habits, motivation for regular physicalactivity is recommended to prevent obesity.

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