

Original Article

Assessment of Risk Factors of Obesity among the College Students

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ABSTRACT:

Background: Obesity has been defined as abnormal or increased fat accumulation. The present study was conducted to assess the risk factors of obesity among study population. **Materials & methods:** This study was conducted on 260 college students in year 2015. The information such as name, age, gender, present weight (Kg) and height (m) was measured. All subjects were subjected to BMI and was calculated by dividing a person's body weight by their height (weight [kg] / height [m]²). **Results:** Subjects were underweight (males- 15, females- 20), normal weight (males- 50, females- 74), over weight (males- 17, females- 22), pre- obese (males- 20, females- 22) and obese (males- 8, females- 11). The difference was non- significant (P > 0.05). The prevalence of obesity was 7.27% in males and 7.33% in females. The risk factors were fast food in 210, soft drink in 185, lack of exercise in 180 and alcoholism in 135 subjects. **Conclusion:** Obesity is increasing in students. The most common reason is frequent use of fast food, alcohol, soft drink and lack of exercise.

Key words: Diet, Exercise, Obesity

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INTRODUCTION

Obesity has been defined as abnormal or increased fat accumulation and the crude population measure of obesity is the Body Mass Index (BMI). BMI is used as a measure to categorize underweight, overweight and obesity in adults. According to WHO a BMI of 30kg/m² or more is considered as obese.¹

Obesity is a disease that affects almost 1/3rd of the adult population. As the pandemic of overweight and obesity around the globe continues to rise, many developing countries face a double burden of over nutrition and under nutrition.²

India has controlled the problem of severe under nutrition to a substantial scope among young children but now facing a mounting epidemic of overweight and obesity among children and adults. World Health Organization (WHO) in its current report exposed that there are over 300 million obese adults and 1.1 billion overweight people

worldwide. Obesity is associated with more than 30 medical conditions and scientific evidence has established a strong relationship with at least 15 of those conditions. Thus there is need to look for the factors directly or indirectly responsible for obesity among population.³

Obesity in turn increases risk of developing high blood pressure, type II diabetes, heart disease, gallbladder disease and cancer of the breast, prostate and colon etc. Lack of physical activity, intake of high-calorie and low-cost foods are the precipitating factors. Environmental and behavioral changes, modernization, and urbanization are among other initiating factors.⁴ The present study was conducted to assess factors of obesity among study group.

MATERIALS & METHODS

This study was conducted in the department of Community medicine on 260 college students of both genders. The study protocol was approved from institutional ethical

committee. Subjects were informed regarding the study and consent was taken.

Information such as name, age, gender, weight (Kg) and height (m) was recorded. Weight and height of all subjects were measured using standardized weighing machine and a height measuring scale. BMI was calculated by dividing

body weight by their height (weight [kg] / height [m]²). A following criteria was used- BMI of 30 - obese, a BMI of 25.0 - 29.9 - Pre-obese and a BMI 23 to 24.9 - overweight/pre-obese. Results were subjected to statistical analysis. P value less than 0.05 was considered significant.

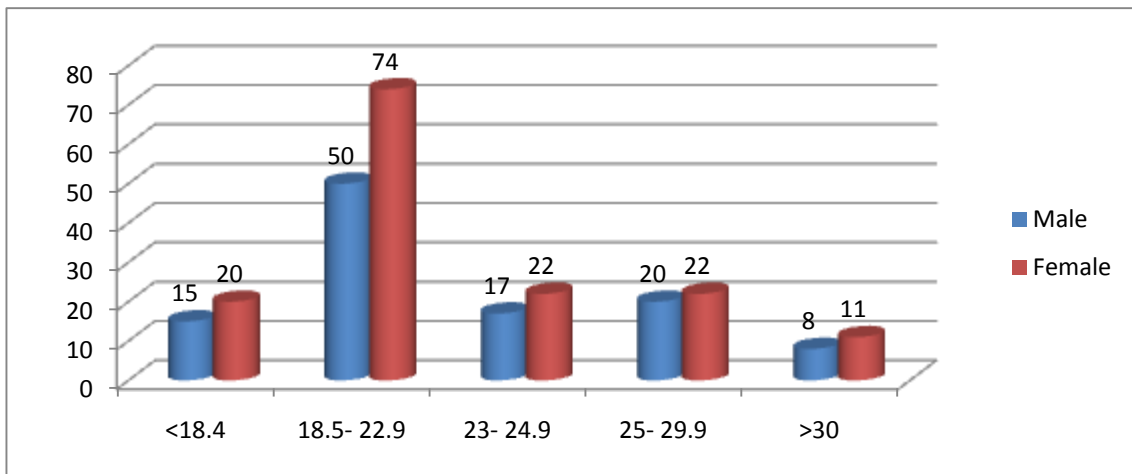
RESULTS

Table I BMI of subjects

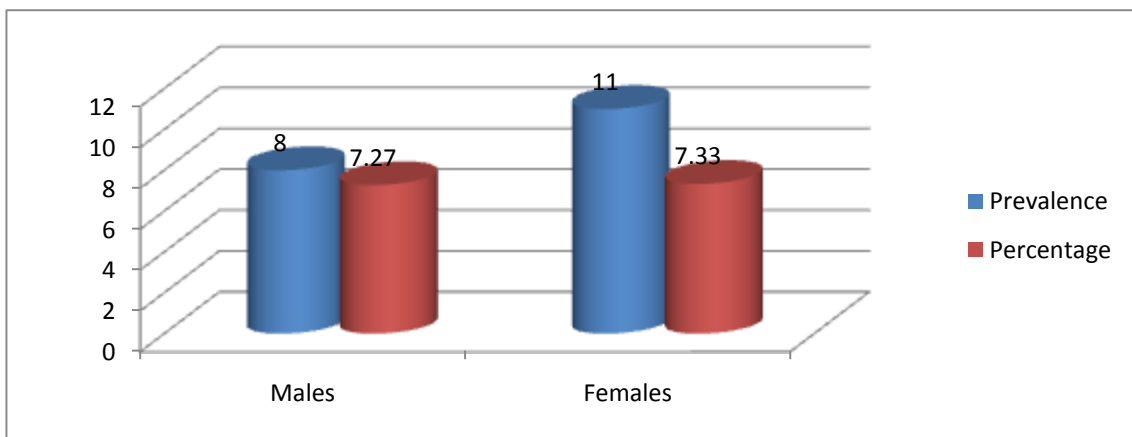
Classification	BMI (Kg/m ²)	Male	Female	P value
Underweight	<18.4	15	20	0.21
Normal weight	18.5- 22.9	50	74	
Over weight	23- 24.9	17	22	
Pre- obese	25- 29.9	20	22	
Obese	>30	8	11	

Table I, Graph I shows that subjects were underweight (males- 15, females- 20), normal weight (males- 50, females- 74), over weight (males- 17, females- 22), pre- obese (males- 20, females- 22) and obese (males- 8, females- 11). The difference was non- significant (P > 0.05).

Graph I: Graph showing BMI of subjects



Graph II Prevalence of obesity among subjects



Graph II shows that the prevalence of obesity was 7.27% in males and 7.33% in females.

Table II Risk factors in subjects

Risk factors	Yes	No
Fast food	210	50
Soft drink	185	75
Exercise	80	180
Alcoholism	135	125

Table II shows that risk factors were fast food in 210, soft drink in 185, lack of exercise in 180 and alcoholism in 135 subjects.

DISCUSSION

Obesity was considered as a problem of developed countries but is now on the increase in the developing countries as well. It has been identified as a major public health issue, affecting more than one in five adults in the United States. WHO report states that more than 300 million are obese and that at least 2.8 million people die each year as a result of diseases due to excess weight or obesity. The worldwide prevalence of obesity has doubled between 1980 and 2008.⁵ Obesity is the serious disease that affects young as well as old aged. College students represent the youthful age population of a community, and are prone to unhealthy eating habits and foods during their college years which might affect their wellbeing and increase the risk of obesity, diabetes and coronary heart disease; like fast food consumption, lower vegetable and/or fruit intake along with physical inactivity and increasing computer and Television viewing hours.⁶ The present study was conducted to assess risk factors of obesity among study group.

In our study, males were 110 and females were 150. Ahmed et al⁷ included 23% males and 77% females in their study. We found that subjects were underweight (males- 15, females- 20), normal weight (males- 50, females- 74), over weight (males- 17, females- 22), pre- obese (males- 20, females- 22) and obese (males- 8, females- 11). Ahmed et al⁷ found that among the total, 41 (17.6%) were having overweight and 16 (6.9%) with obesity. 65% performed physical activity in the last month, of which 100 (66%) performed vigorous physical activity. 212 (95.5%) reported a diet history of mixed Diet. No significant association was noted except for gender and year of study with BMI where 34.6% of males were overweight & obese compared to females (21.5%) and 29.6% of them were 1st year students as compared to the 2nd year students (16.5%). Overweight and obesity were found more among participants who were not doing physical activity (32.1%) as compared to those doing physical activity (20.4%), of which obesity was less among those who performed vigorous activity (19%). Participants who follow vegetarian diet (80%) had normal BMI as compared to the mixed diet followers of 59%.

We found that the prevalence of obesity was 7.27% in males and 7.33% in females. Gupta et al found similar results.⁸ Genema et al⁹ found that 28.9% of the students were overweight, 11.8 % were obese, while (55.8%) were of normal weight (49.6% of males compared to 59.1% of females), and 3.5% were underweight. Eating habits of the students showed that the majority (80%) was taking meals irregularly. Almost half of students (45.7%) reported eating two meals per day (44.4% of females as compared to 48.2% males). About 57.6% of female students reported eating breakfast daily or three to four times per week compared to 55.3% male students. Two third of the student were taking snacks daily or three to four times per week (68.1% female vs. 71.6% males, with a statistically significant difference between males and females (p=0.034). Male students tend to eat more fruits daily as compared to females (39.7% vs. 36.2% respectively). Smoking was not common among students.

CONCLUSION

Obesity is increasing in students. The most common reason is frequent use of fast food, alcohol, soft drink and lack of exercise.

REFERENCES

1. Ismail MN, Chee SS, Nawawi H, Yusoff K, Lim TO, James WP. Obesity in Malaysia. *Obes Rev.* 2002; 3: 203-8
2. Rampal L, Rampal S, Khor GL, Zain AM, Ooyub SB, Rahmat RB, Ghani SN, Krishnan J. A national study on the prevalence of obesity among 16,127 Malaysians. *Asia Pac J Clin Nutr* 2007; 16: 561-6.
3. Martorell, R., Khan, L.K., Hughes, M.L. et al. 2000. Obesity in women from developing countries. *Eur. J. Clin. Nutr.* 54; 247-252.
4. Sturm R. The effects of obesity, smoking, and drinking on medical problems and costs. *Health Aff (Millwood)* 2002; 21: 245-53.
5. Shashikiran U, Sudha V, Jayaprakash B .What is Obesity? *The Medical Journal of Malaysia.* 2004; 59: 10-4.
6. Gupta S, Ray TG, Saha I. Overweight, obesity and influence of stress on body weight among undergraduate medical students. *Indian J Community Med.* 2009; 34: 255-7.

7. Ahmed, Grover VL, Aggarwal K, Kanan AT. Nutritional Status and Blood Pressure of Medical Students in Delhi. *Ind J Comm Med.* 2006; 31: 248-5.
8. Gupta, Chia GJQ, Wong LC, Chew RM, Chong W, Loo RCN. The prevalence of obesity among clinical students in a Malaysian medical school. *Singapore Med J.* 2010; 51: 126.
9. Genema Kerkadi A. Evaluation of nutritional status of United Arab Emirates University female students. *Emirates Journal of Agricultural Science.* 2003; 12: 42-50.