ORIGINAL ARTICLE

ASSESSMENT OF RISK FACTORS LEADING TO OBESITY AMONG THE COLLEGE STUDENTS: A COMMUNITY PROGRAMME

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ABSTRACT:

Background: 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. The present study was conducted to estimate the risk factors leading to obesity among study population. **Materials & methods:** This study was conducted on 300 college students in year 2015. Subjects were informed regarding the study and consent was taken. A predesigned questionnaire was used to collect the information such as name, age, gender, ethnic origin and their present weight (Kg) and height (m). Weight and height of all subjects were measured using standardized weighing machine and a height measuring scale. All subjects were subjected to BMI and was calculated by dividing a person's 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:** Out of 300 subjects, males were 140 and females were 160. The difference was non - significant (P – 0.1). Subjects were underweight (males- 21, females- 24), normal weight (males- 68, females- 77), over weight (males- 20, females- 22), pre-obese (males- 23, females- 25) and obese (males- 8, females- 12). The difference among both genders was non- significant (P > 0.05). Thus, the prevalence of overweight subjects was 14% and obese was 6.6%. Out of 140 males, 60 were from rural and 80 were from urban population. Out of 160 females, 70 were from rural and 90 were from urban population. The difference was non - significant (P> 0.05). Subjects were of Indian origin and chinese origin. Among Indians, they were underweight (41), normal (139), over weight (37), pre- obese (46) and obese (17). Among Chinese, they were underweight (4), normal (6), over weight (5), pre-obese (2) and obese (3). The difference was significant (P < 0.05). **Conclusion:** Obesity is increasing in today's life style. There is urgent demand of adopting healthy healthy food habits, lifestyles, and a physically active daily routine, among the adults to minimize dangers of the risks of developing chronic degenerative diseases.

Key words: Nutrition, Obesity, Urban

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INTRODUCTION

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. This 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.[1] Therefore there is need to take this issue seriously. 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.[2]

India has controlled the problem of severe under nutrition to a substantial extent among young children but now facing a rising epidemic of overweight and obesity among children and adults. World Health Organization (WHO) in its recent report revealed that there are over 300 million obese adults and 1.1 billion overweight people worldwide.[3] Obesity is associated with more than 30 medical conditions and scientific evidence has established a strong relationship with at least 15 of those conditions. A study conducted by RAND organization, concluded that obesity is more

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damaging to health than smoking, high levels of alcohol drinking and poverty.[4]

The present study was conducted to estimate the risk factors leading to obesity among study population.

MATERIALS & METHODS

This study was conducted on 300 college students in year 2015. Subjects were informed regarding the study and consent was taken. A predesigned questionnaire was used to collect the information such as name, age, gender, ethnic origin and their present weight (Kg) and height (m). Weight and height of all subjects were measured using standardized weighing machine and a height measuring scale. All subjects were subjected to BMI and was calculated by dividing a person's 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. Community programs were arranged by the investigators utilizing the students to spread the information about the health effects of overweight and obesity along with the prevention strategies.

RESULTS

Table I shows that out of 300 subjects, males were 140 and females were 160. The difference was non - significant (P – 0.1). Table II shows BMI of subjects. Subjects were underweight (males- 21, females- 24), normal weight (males- 68, females- 77), over weight (males- 20, females- 22), pre- obese (males- 23, females- 25) and obese (males- 8, females- 12). The difference among both genders was non- significant (P > 0.05). Thus, the prevalence of overweight subjects was 14% and obese was 6.6%. Graph I shows that out of 140 males, 60 were from rural and 80 were from urban population. Out of 160 females, 70 were from rural and 90 were from urban population. The difference was non - significant (P> 0.05).

Graph II shows that subjects were of Indian origin and chinese origin. Among Indians, they were underweight (41), normal (139), over weight (37), pre- obese (46) and obese (17). Among Chinese, they were underweight (4), normal (6), over weight (5), pre- obese (2) and obese (3). The difference was significant (P < 0.05).
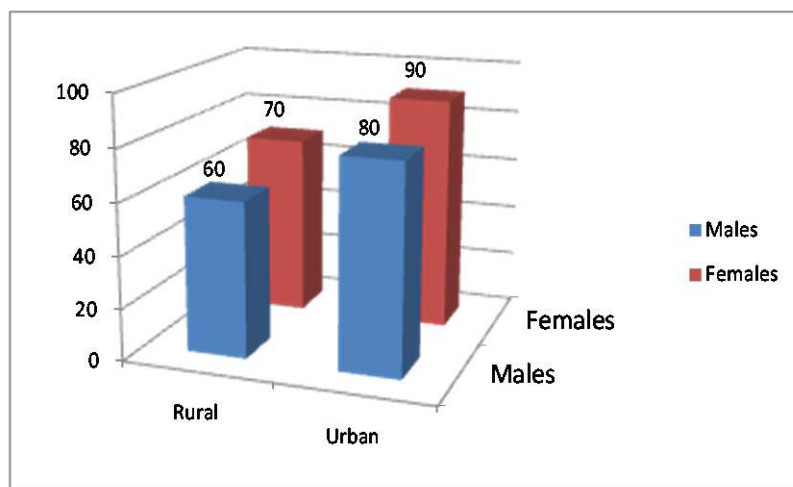
Table I Distribution of subjects

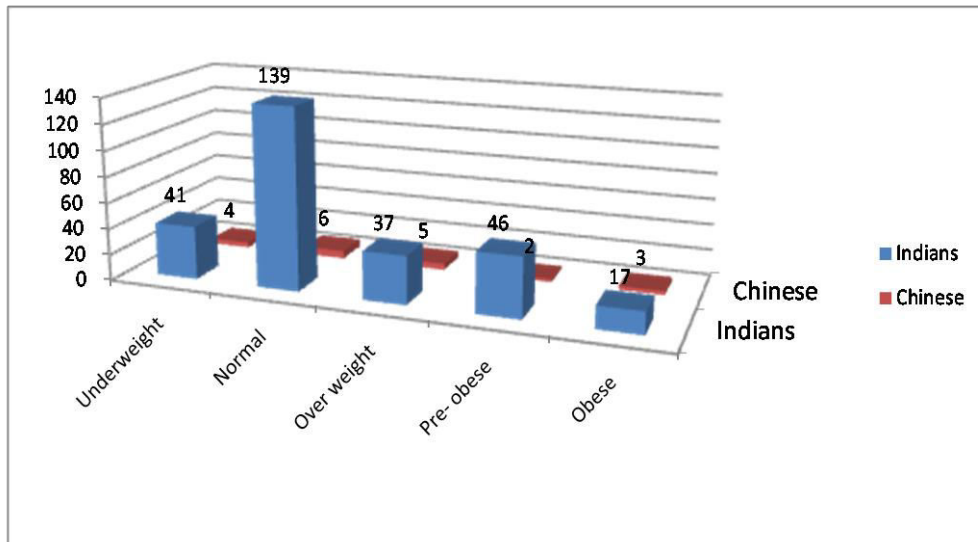| Total - 300		
Male	**Female**	**P value**
140	160	0.1

Table II BMI of subjects

Classification	BMI (Kg/m^2)	Total	Male	Female
Underweight	**<18.4**	45	21	24
Normal weight	**18.5- 22.9**	145	68	77
Over weight	**23- 24.9**	42	20	22
Pre- obese	**25- 29.9**	48	23	25
Obese	**>30**	20	8	12
Total		300	140	160

Graph I Geographical distribution of subjects

Graph II Ethnic wise distribution of subjects

DISCUSSION

Obesity is the serious disease that affects young as well as old aged. The present study was conducted to estimate the risk factors leading to obesity among study population. In this study, we evaluated the BMI of college students. In our study, males were 140 and females were 160. The prevalence of overweight subjects was 14% and obese was 6.6%. Another population-based cross-sectional study conducted in Malaysia showed that the overall national prevalence of obesity among Malaysians aged 15 years old and above was 11.7%.[5]

We found that subjects were underweight (males- 21, females- 24), normal weight (males- 68, females- 77), over weight (males- 20, females- 22), pre- obese (males- 23, females- 25) and obese (males- 8, females- 12). Our results are in agreement with Boo et al.[6] They found that most of the subjects were overweight.

We found that 60 males and 70 females were from rural population. Similarly, 80 males and 90 females were from urban population. The increased urbanization, lack of physical exercise, eating junk food led obesity. Gupta found similar results.[7]

We also correlated the ethnicity with obesity and found that in our study, maximum number of obese subjects were Indians as compared to Chinese. Chhabra P[8] found same results in his study.

CONCLUSION

Obesity is increasing in today's life style. There is urgent demand of adopting healthy healthy food habits, lifestyles, and a physically active daily routine, among the adults to minimize dangers of the risks of developing chronic degenerative diseases.

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