



A CROSS-SECTIONAL STUDY ON OBESITY AND INFLUENCE OF DIETARY FACTORS ON THE WEIGHT STATUS OF AN ADULT POPULATION

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Abstract

Background:

Obesity has reached epidemic proportions globally and is a major contributor to the global burden of chronic diseases. Dietary factors are the major modifiable factors through which many of the external forces promoting weight gain act.

Objectives:

The objectives were to find the prevalence of overweight and obesity in the urban population of Lucknow and to explore the effect of dietary factors on the weight status of the people.

Materials and Methods:

A cross-sectional study was conducted among the adult population of Lucknow. Cluster sampling technique was used to select study samples. Data were collected in a prestructured questionnaire by interviewing subjects through house-to-house visits. Data were analyzed in Epi Info and appropriate statistical methods were used.

Results:

The prevalence of overweight and obesity was found to be 22.04% and 5.20%, respectively. Overweight was more prevalent in females than males. The prevalence rose with an increase in age up to 60 years. Among dietary factors, the total calorie intake and habit of snacking had a positive association with weight gain ($P < 0.05$). The

mean intake of oil was more and the mean intake of vegetables was less among overweight subjects than non overweight subjects ($P < 0.05$).

Conclusion:

The prevalence of overweight and obesity in the urban population in Lucknow was found to be 22.04% and 5.20%, respectively. Total calorie intake as well as composition of diet was the important dietary factor affecting weight gain.

Result:-

The prevalence of overweight and obesity in the urban population of Lucknow was found to be 22.04% and 5.20%, respectively. The prevalence of overweight in an urban population of India, as found in National Family Health Survey during 2005-06, was 11.38%. The prevalence of obesity was 2.24% in the same survey. Though the prevalence found in the present study is higher than the national average, it is lower than that of developed countries. National Health and Nutrition Examination Survey observed the prevalence of overweight to be 66.3% in 2004. General Household Survey found the prevalence to be 61% in 2003. National Health Survey in Australia found the prevalence to be 49% in 2005. The higher prevalence of overweight in the present study could be because of imbalance in the diet and faulty food habits prevalent in the region.

Age is another biological non-modifiable factor which influences individual's susceptibility to weight gain and the development of obesity. In the present study, it was found that overweight prevalence increased with the rise in age. It was highest in the age group of 50-60 years after which it declined. The decline in the proportion of overweight in the older age group might be due to the decreased body mass with age which might be a consequence of decreased calorie intake as well as decreased absorption from the gut. The age wise distribution of obese persons observed in NFHS-III among women also revealed an increasing trend of obesity with the age up to 50 years; in men, a similar trend was observed.. Though higher prevalence is observed in the later part of life, this is a consequence of the presence of risk factors of obesity in earlier age. So despite the higher prevalence in the older age group, obesity preventive intervention should be directed in the younger age group and therapeutic and complication prevention interventions should be carried out in later age groups to mitigate the impact of obesity.

Studies have repeatedly shown that the high socioeconomic status is negatively correlated with obesity in developed countries, but positively correlated with it in populations of developing countries. In the present study, overweight status had a positive association with the socioeconomic level but the association was not statistically significant.

Dietary energy intake is one end of the energy balance equation. The intake of calories more than our body requirement leads to positive energy balance and so obesity. This fact was confirmed in the present study. It was found that the prevalence of overweight was higher among those who consumed more than recommended calories than those who were taking recommended or less calories per day. The difference was found to be statistically significant ($P < 0.001$). Recent data from Australia, the United States, and Europe further confirm that the increased self-reported energy intake associated with obesity.

Among other factors in dietary consumption, the intake of snacks impacted overweight positively while the type of food either vegetarian or mixed did not affect the weight status of subjects significantly.

The average intake of oil and vegetables by the study subjects was far less than the recommended intake of these food items. Also, there was a difference in the amount of consumption of these foods in overweight and non-overweight groups. The amount of oil intake was more among overweight than non-overweight subjects and the mean intake of vegetables was less among the overweight subjects than their non-overweight counterparts. Thus, there was positive association between oil intake and overweight status and a negative association between vegetable intake and overweight status which was statistically significant. Similar findings were observed in the study of Nutrition Foundation of India (1998) which indicated that the consumption of refined oil and saturated fats (ghee and vanaspati) was significantly higher among the obese individuals ($P < 0.05$). Lin BH *et al.* (2002), on examining the relationship between fruits and vegetables and obesity, found the negative correlation between vegetable consumption and BMI to be significant among adults.

In the present study, an attempt was made to explore the relationship between the frequency of various foods and weight status of subjects. It was observed that

overweight was more prevalent among those who were consuming fruits and vegetables less frequently and those who were consuming fried food more frequently though the difference found was not statistically significant.

The effect of higher intake of restaurant food and fast food on weight status was also observed. It was found that the proportion of overweight was more among those subjects who were consuming restaurant food and fast food more frequently. According to the WHO expert committee, high intake of energy-dense micronutrient-poor foods which is the case in most of fast food is convincingly related with unhealthy weight gain and there is a possible relation between the high proportion of intake of food prepared outside home and unhealthy weight gain.

Conclusion

The prevalence of overweight and obesity in the urban population of Lucknow was found to be 22.04% and 5.20%, respectively. Among dietary factors, not only the total calorie intake but also the pattern of food consumption affects the weight status of people. Both the amount and frequency of consumption of various foods influence the weight pattern.

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