

Prevalence of Overweight and Obesity Among the College-going Girls of Punjab

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INTRODUCTION

Obesity and overweight are serious health problems. Strictly speaking, obesity connotes an excessive fat accumulation in adipose tissue whereas overweight indicates an excessive body weight in relation to height. However, these terms are often employed synonymously. It is now estimated that over 100 million people worldwide are obese and 58 million of these are in developing countries (Seidell, 1999; Shetty, 2003). The prevalence of overweight and obesity is escalating rapidly worldwide. Some scientists (Hill and Peter, 1998; Popkin and Doak, 1998) concluded that obesity has already reached epidemic proportions in developed countries and their observations are that the developing world might fall into its grip very soon. Industrialized and developed countries are showing a rise in overweight persons among their populations along with changing economic conditions. Indeed, obesity is now so common that it is replacing the mere traditional public health concerns, such as undernutrition and infectious diseases, as one of the most significant contributors of ill-health. Furthermore, increasing prevalence of obesity in a population and particularly among girls is an early indicator of emerging health burden due to non-communicable chronic diseases like cardiovascular diseases, hypertension, diabetes, respiratory problems, sleep apnoeas and orthopaedics complications. Not only this, obesity also has social, economic and psychological consequences, besides effect on high school performance, college acceptance and on marriage among youth. So, the cost of obesity to society represents a very important issue and it needs to be thoroughly examined. The prevention and control of this problem, therefore, claim priority attention, because developing countries can ill-afford to bear the financial cost of obesity and its consequences. To target individuals and subgroups of populations who have developed or are at risk of developing obesity and its comorbidities, obesity management programmers

should be established within health care and community services. The primary prerequisite for all this is the availability of information about the ground reality of obesity among various populations in order to set goals and targets to reduce its prevalence. Therefore, in the present study an attempt has been made to study the current prevalence of overweight and obesity among college-girls of Amritsar (Punjab).

MATERIAL AND METHODS

In this study, the data from 500 college girls of age 18 and above were collected during the year 2001-2002 from Amritsar city of Punjab. All subjects were of Punjabi origin and belonged to upper middle class with parent's income ranging from 10,000/- to 15000/- per month. The majority of data were collected from various colleges of Amritsar district of Punjab. During data collection, personal interviews were held with each subject. All the information about sociodemographic variables, dietary pattern and physical activity was collected from each subject. For the assessment of obesity, height and weight measurements were taken on each subject using standard protocol given by Weiner and Lourie (1981). The practical and clinical definition of overweight and obesity is based on body mass index (BMI). Therefore, the value of BMI was calculated for each subject by the following method:

$$\text{BMI} = \text{Weight (kg)} / \text{Height (m)}^2$$

The suggested critical limits of BMI by WHO (1998) were utilized for the assessment of malnutrition.

Classification	Body mass index (BMI)
Underweight	< 18.5
Normal range	18.5-24.9
Overweight	25.0-29.0
Obese (Grade I)	30.0-34.9
Obese (Grade II)	35.0-39.9
Obese (Grade III)	> 40

RESULTS AND DISCUSSION

According to World Health Organization (WHO, 1998), body mass index (BMI) provides the most useful, albeit crude, population-level measure of obesity, and it can be used to estimate the prevalence of overweight/obesity within a population and the risks associated with it. Therefore, in the present study, the prevalence rate of malnutrition was calculated according to BMI. Table 1 presents the distribution of all the studied subjects according to BMI classification. Out of 500 girls, only 29 (5.8%) are underweight, 255 (51%) are normal while 141 girls (28.2%) are overweight and 75 girls (15%) are obese.

Table 1: Classification of college girls according to body mass index (BMI)

Body mass index (BMI)	Number of subjects	Percentage prevalence	Nutritional status
< 18.5	29	5.8	Undernourished
18.5-24.9	255	51.0	Normal
25.0-29.9	141	28.2	Overweight
30.0-40.0	75	15.0	Obese

Thus, it is apparent from the present study that about 43.2% girls are currently overweight and obese. Several explanations can be given for high incidence of overweight and obesity among Punjabi girls. In Punjab, both dietary intake and physical activity patterns have changed considerably in recent times. The former has improved and the latter has deteriorated both in terms of quantity and quality. The socio-economic development of recent decades in Punjab has generated a neo middle class, both at the rural and urban level. The tendency of urbanization has also increased. This has brought a dietary intake which is particularly high in fat energy like butter, *desi ghee*, sugar and junk foods. Thus, the consumption of increased dietary fat and decreased level of physical activity has contributed to this state of health in individuals. In addition to the type of neo middle class family background, this segment of the society has bought all household and daily-use items which reduce their physical effort. This sedentary lifestyle of modern society has thus posed on increasing overweight and obesity. This has affected the current generation of children and adolescents also. In relation to earlier times, the present generation of the adolescents may be the most sedentary in the history. The children and adolescents spend a fair proportion of their

time in school and college. It has been observed from the present study that among young girls, there is a decline in physical activity in schools and colleges. This is due the fact that bicycles generally used in earlier years by the students for commuting from their homes to schools and colleges are now replaced by scooters, motor-bikes and cars. Gone are the days of walking on foot and cycle. The common use of these vehicles has brought in a relatively comfortable situation for students, making their life more sedentary. There are fewer tendencies among them to participate in games and athletics.

Now-a-days, these children and adolescents spend more time in a day in physically passive behaviours, such as, TV viewing, playing videogames on TV and computer, talking on phones, etc. Such passive behaviours often accompanied by other adverse practices, such as, snacking or consuming high fat or high sugar foods alongside such sedentary behaviours. This suggests that the primary cause of rapid global rise in obesity lies in environment and societal changes that are now affecting a large proportion of the world's population. Despite obesity having strong genetic determinants, genetic composition of the population does not change rapidly. Therefore, the large increase in the prevalence is mainly due to environmental factors. Thus, lifestyle transition and economic improvement have contributed to the problem of adolescent obesity in Punjab. A major concern about childhood and adolescent obesity is that obese children and adolescents tend to become obese adults. There is urgent need to address the problem and now is the time to act.

KEYWORDS Overweight. Obesity. Body Mass Index. College-going Girls.

ABSTRACT In the present study, an attempt has been made to report the prevalence of overweight and obesity in 500 college-going girls of Amritsar district of Punjab. For the assessment of overweight and obesity, height and weight measurements were taken on each subject. The prevalence rate of malnutrition was calculated according to the critical limits of body mass index (BMI). The observations reveal that the prevalence of overweight and obesity in Punjabi girls is 28.20 and 15.00%, respectively.

REFERENCES

- Hill, J.O. and Peter, J.C.: Environmental contribution to the obesity epidemic. *Science*, **280**: 1371-1374 (1998).
- Popkin, B.M. and Doak, C.M.: The obesity epidemic is a worldwide phenomenon. *Nutr. Rev.*, **56**: 106-114 (1998).

- Seidell, J.C.: Obesity: growing problem. *Acta Paediat.*, **428**: 46-50 (1999).
- Shetty, P.: Obesity: an emerging public health problem in Asia. *NFI Bull.*, **24**: 6-8 (2003).
- Weiner, J.S. and Lourie, J.A.: *Practical Human Biology*. Academic Press, Inc., New York (1981).
- WHO (World Health Organization): *Obesity preventing and Managing the Global Epidemic*. Report of WHO Consultation on Obesity. World Health Organization, Geneva (1998).

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