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Prevalence of Overweight among School Going Children of Bellary, Karnataka, India.

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ABSTRACT

Obesity is a complex condition with serious social and psychological dimensions, that affects virtually all age and socioeconomic groups and threatens to overwhelm both developed and developing countries. A cross sectional study was conducted among 5th and 6th standard students of primary school of Bellary city Corporation. The sample size was 100 and the technique adopted is simple random sampling. Permission from respective authorities of schools was also taken. Data was collected using pre designed and pretested semi structured questionnaire. The prevalence of overweight and obesity is found to be 21%. The prevalence of overweight alone is 17% and obesity is 4%. There is increased prevalence of overweight/obesity among children.

INTRODUCTION

Obesity is a complex condition with serious social and psychological dimensions, that affects virtually all age and socioeconomic groups and threatens to overwhelm both developed and developing countries.

World Health Organization's latest projections indicate that globally in 2005, approximately 1.6 billion adults were overweight and at least 400 million adults were obese. World Health Organization further projects that by 2015, approximately 2.3 billion adults will be overweight and more than 700 million will be obese [1].

The problem of obesity is confined not only to adults but also to children and adolescents. Various studies also indicate that the prevalence of overweight and obesity amongst children of all ages is increasing in developing countries in the past few decades [2,3]. Figures on the global prevalence of childhood obesity have been compiled by the World Health Organization where several developing countries such as Nicaragua, Brazil, Antigua, Zambia, Venezuela and Peru, show a prevalence rate of over 2%. Countries such as Barbados, Honduras, Lesotho, Bolivia, Trinidad, Iran and Mauritius have >4% prevalence, while Jamaica and Chile top the list with 10% greater prevalence rate in school children. There is only limited data on the prevalence of obesity among adolescents in India.

The rising prevalence of childhood/adolescent obesity cannot be addressed by a single aetiology. Multiple factors play a role i.e. lack of physical activity, unhealthy eating patterns, or a combination of both with genetics and lifestyle playing important roles in determining a child's weight. Television, computer and video games contribute to children's inactive lifestyles [4]. Food preferences developed in childhood remain fairly constant into adulthood. Children are eating more meals away from home and those meals are often high in fat and low in fibre-rich carbohydrates such as fruits, vegetables and whole grains. It is easy for

children to consume high fat, calorie-dense foods because many kids are provided with pocket money and have the freedom of choice in meals, especially breakfast and lunch.

METHODOLOGY

This cross-sectional study was conducted among primary school of Bellary city Corporation, Karnataka. The study subjects consisted of 5th and 6th standard students. Totally 100 children were selected by simple random sampling technique.

Data was collected by interview technique using a pre-tested questionnaire after telling them what the study is about and taking the verbal consent of the students. Consent from school authorities was also taken. Simultaneously, height and weight were measured.

Height was taken using a standard three piece anthropometric rod at their classrooms corrected up to 1mm. students were asked to stand upright against a wall with the heels touching the wall and the chin held horizontally so that the tragus of the ear and the eye are in a straight line, then the rod was adjusted and the height in cm was read. Weight of all students was taken using bathroom scales calibrated at the legal Metrology department and corrected with a lever balance up to 0.5 kg and calibrated daily for zero error. The students were asked to stand upright, bare footed on the weighing machine looking straight while the measurement was read. A measurement called percentile of Body Mass Index (BMI) is used to identify overweight and obesity in study subjects.

Body mass index is calculated based on physical measurements such as height and weight.

$BMI = \text{weight (kg)}/\text{height (m)}^2$ National Centre For Health Statistics/CDC -2000 growth charts for children and adolescents aged 2-20 years i.e. BMI for age and sex percentile growth curves are used to classify the subjects as overweight and obesity.

The classification adopted in this study is, Weight Status Category Percentile Range

Underweight - Less than the 5th percentile

Normal weigh - 5thpercentile to less than the 85th percentile Overweight - 85th to less than the 95th percentile

Obese - Equal to or greater than the 95th percentile

RESULTS

In this study, 100 children were considered as study subjects and among them 64% were boys and 36% were girls.

Table 1: Age wise distribution of study subjects

Age	N	%
10yrs	04	4
11yrs	38	38
12yrs	58	58
Total	100	100

Majority of study subjects were in the age group 12 years (58%) followed by 11 years (38%) and 10 years (4%)

Table 2: Distribution of subjects based on Body mass index

Category	N	%
Under weight	47	46
Normal weight	32	32
Over weight	17	17
Obesity	04	04
Total	100	100

The prevalence of obesity among study subjects was found to be 4% and overweight is 17%. Together, prevalence of overweight and obesity is 21%. Underweight children comprised of 46%.

DISCUSSION

The present study revealed that the combined prevalence of overweight and obesity is 21%. Comparing the results of this study with other studies in India revealed that the prevalence of overweight is consistent with other studies whereas the prevalence of obesity is high.

The prevalence study of obesity among adolescents in public schools of Ludhiana, catering to the affluent segment of population, showed that 12.7% were overweight and 3.4% were Obese^[5]. Another study carried out in Amritsar district of Punjab found that the prevalence of overweight is 10.94% and obesity 5.62 %^[6]. The high prevalence of overweight/obesity in children is important because obese children become obese adults thus increasing the risk of various diseases. This has been proved in many other studies in the past and is being researched even today to find the exact etiology^[7].

A school based study in Chennai done in adolescents showed that the prevalence peaked at 10,13 and 15 years⁹ but whereas a study in Delhi showed that the maximum prevalence of obesity was at 10 -12 years^[8]. It has been found that prevalence in higher ages of adolescents is reflective of overweight/obesity in adulthood^[9].

CONCLUSION

The magnitude of overweight/obesity among school students in Bellary City Corporation is high compared to other studies conducted in India.

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