

Original Research Article

To assess the prevalence of obesity among school children of age group 5-12 years**Nilesh Gothi¹, Ram Prakash Bairwa², Roshni Dodiya³, Aditi Gothi⁴**¹*Associate Professor, Department of Paediatrics, Government Medical College, Dungarpur, Rajasthan, India.*²*Assistant Professor, Department of Paediatrics, Government Medical College, Dungarpur, Rajasthan, India.*³*Senior Resident, Department of Paediatrics, Government Medical College, Dungarpur, Rajasthan, India.*⁴*Assistant Professor, Department of PSM, Government Medical College, Dungarpur, Rajasthan, India.***Received: 10-03-2021 / Revised: 19-04-2021 / Accepted: 20-05-2021****Abstract**

Background: Many countries are going through an economic and nutrition transition which is associated with a change in dietary habits, decreasing physical activity and rising prevalence of obesity. Overweight and obesity are major risk factors for a number of chronic diseases. The present study was conducted to assess the prevalence of obesity among school children of age group 5-12 years. **Materials and Methods:** The present study was conducted to assess the prevalence of obesity among school children of age group 5-12 years over a period of 6 months. The total children included in the study were 1000. A predesigned and pretested interviewer administered questionnaire was used to collect information. A weighing scale and stadiometer were used to measure the weight and height of each child using standard procedure. BMI was calculated as weight (kg)/height² (m²). The date of birth of each child was taken from the school records. Data was collected. Children were categorized into three groups: obese, overweight and normal. Data were analyzed using Statistical package for the Social Sciences (version 21.0). For all statistical tests, $P < 0.05$ was taken as the significance level. **Results:** In the present study total children selected for the study were 1000 in which 544 were boys and 456 were girls. The overweight boys were 5.88% and girls were 5.04% and obese boys were 2.20% and girls were 1.09%. Overweight children were maximum in the age 9-10 yrs and minimum in 11-12 yrs. Obese children were maximum in age group 8-9 yrs and minimum in 11-12 yrs. **Conclusion:** This study concluded that overweight and obese boys were more than girls. Overweight children were maximum in the age 9-10 yrs and minimum in 11-12 yrs. Obese children were maximum in age group 8-9 yrs and minimum in 11-12 yrs.

Keywords: Obesity, Overweight, BMI.

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Introduction

Overweight and obese are the terms used to describe body weight in excess of what is considered healthy for a particular height[1,2]. According to the World Health Organization (WHO), for children aged 5–19 years, overweight is defined as a Body Mass Index (BMI)-for-age greater than one standard deviation, and obese as a BMI-for-age greater than two standard deviations above the WHO growth reference median[1]. Overweight/obesity is defined as abnormal or excessive fat accumulation that may impair health[3]. There is a substantial increase in prevalence of overweight/obesity among children and adolescents in both developed and developing countries [4]. Overweight and obesity are major risk factors for a number of chronic diseases, including diabetes, cardiovascular diseases and cancer. Obesity in children and adolescents is gradually becoming a major public health problem in many developing countries, including India[5]. One-half of obese school children become obese adults. However, whether or not obesity persists into adulthood, obesity in childhood appears to increase the risk of subsequent morbidity[6–8]. According to WHO,[9] the prevalence of obesity is 4.8% in developing countries, 17.1% in transitional countries and 20.4% in developed countries. The causes for the precipitation of overweight and obesity are multifactor including genetic, biological, social, and environmental determinants either

collectively or independently affecting weight gain by acting through the mediators of energy metabolism and physical activity[10]. The present study was conducted to assess the prevalence of obesity among school children of age group 5-12 years.

Materials And Methods

The present study was conducted to assess the prevalence of obesity among school children of age group 5-12 years over a period of 6 months. The total children included in the study were 1000. Before the commencement of the study ethical approval was taken from the Ethical committee of the institute. The written informed consent was obtained for carrying out study and general check up was obtained from the parents of the selected students 1 day prior to the survey with the help of Principal/Teachers of the school.

All children found to be < 5 and > 12 yrs of age, children whose exact birth date was not available, children without written informed consent and those with Ht/Wt error during data management were excluded from the study. A predesigned and pretested interviewer administered questionnaire was used to collect information. A weighing scale and stadiometer were used to measure the weight (nearest 0.5 kg) and height (nearest 0.1 cm) of each child using standard procedure[11]. BMI was calculated as weight (kg)/height² (m²). The date of birth of each child was taken from the school records. Data was collected. Children were categorized into three groups: obese (>95th percentile), overweight (≥85th percentile) and normal (<85th percentile, > 5th percentile) using age- and sex-specific percentiles of BMI[12]. Data were analyzed using Statistical package for the Social Sciences (version 21.0). For all statistical tests, $P < 0.05$ was taken as the significance level.

Results**Correspondence***Dr. Aditi Gothi**

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In the present study total children selected for the study were 1000 in which 544 were boys and 456 were girls. The overweight boys were 5.88% and girls were 5.04% and obese boys were 2.20% and girls

were 1.09%. Overweight children were maximum in the age 9-10 yrs and minimum in 11-12 yrs. Obese children were maximum in age group 8-9yrs and minimum in 11-12 yrs.

Table 1: Prevalence of overweight/obesity on the basis of gender and BMI for age percentile categories

Gender	BMI for age percentile categories			
	Underweight N(%)	Normal N(%)	Overweight N(%)	Obese N(%)
Boys (N=544)	78(14.33%)	422(77.57%)	32(5.88%)	12(2.20%)
Girls (N=456)	56(12.28%)	372(81.57%)	23(5.04%)	5(1.09%)
Total(N=1000)	134(13.4%)	794(79.4%)	55(5.5%)	17(1.7%)

Table 2: Distribution of obesity and overweight according to age group

Age (yrs)	Overweight N(%)	Obese N(%)	Total N(%)
5-6	7(12.72%)	2(11.76%)	11(15.27%)
6-7	11(20%)	2(11.76%)	13(18.05%)
7-8	6(10.90%)	3(17.64%)	9(12.5%)
8-9	9(16.36%)	6(35.29%)	15(20.83%)
9-10	12(21.81%)	1(5.88%)	13(18.05%)
10-11	6(10.90%)	2(11.76%)	8(11.11%)
11-12	4(7.27%)	1(5.88%)	5(6.94%)
Total	55(76.38%)	17(23.61%)	72(100%)

Discussion

There are a few studies, reporting, prevalence of childhood and adolescent obesity and overweight from different parts of India (Punjab, Maharashtra, Delhi and South India) that range from 3% to 29%, and also indicate that the prevalence is higher in urban than in rural areas[13]. In the present study total children selected for the study were 1000 in which 544 were boys and 456 were girls. The overweight boys were 5.88% and girls were 5.04% and obese boys were 2.20% and girls were 1.09%. Overweight children were maximum in the age 9-10 yrs and minimum in 11-12 yrs. Obese children were maximum in age group 8-9yrs and minimum in 11-12 yrs. A study done in Hyderabad[14] and Ethiopia[15] showed a higher prevalence of overweight status but a lower prevalence of obesity among girls compared to boys.

In the Indian sample, the prevalence of overweight and obesity among affluent girls aged 10-15 years in Chennai was 9.6% and 6.2%, respectively[16]. Another study by Goyal et al[17] shows that the prevalence rates of overweight and obesity were 11.75% and 2.2%, respectively. Females are more likely to be obese as compared to males, owing to inherent hormonal differences[18].

Diet alone is not a precursor of obesity. The duration and intensity of physical activity along with diet plays a major role in the occurrence of obesity. Even after controlling genetic liability and childhood environment, decreased rate of weight gain was associated with persistent physical activity[19].

Increased economy is associated with increased body weight in developing countries like India[20]. Increased economy may provide an opportunity to have choice and preparation of food. In developed countries, it is assumed that children belonging to families of disadvantaged economic status, because of their lower earning power and decreased knowledge of healthy nutrition, were more exposed to high calorie foods and simple carbohydrates, which are cheaper and easier to access. A reverse trend is being in force in developing countries. Modernization and urbanization offer calorie rich foods for the children being known that it may lead to develop obesity and associated complications. This association appears to be characteristic of a region in an economic transition[21].

Conclusion

This study concluded that overweight and obese boys were more than girls. Overweight children were maximum in the age 9-10 yrs and minimum in 11-12 yrs. Obese children were maximum in age group 8-9yrs and minimum in 11-12 yrs.

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Conflict of Interest: Nil

Source of support: Nil