

Child Nutrition 2019: Prevalence and determinants of obesity and overweight among school children of Ahmedabad city, Gujarat: A cross sectional study- Nilesh Thakor- Gujarat University

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Abstract

Childhood obesity itself is an analyst of adult obesity and of higher than probable adult morbidity and mortality. Due to difficulty in the treatment of obesity in adults and the several long-term adverse effects of childhood obesity, prevention of childhood obesity has now been known as a public health priority.

To know the occurrence and causes of obesity in school children of Ahmedabad city.

Methodology:

The cross-sectional education from July 2009 to April 2011 in randomly particular 10 schools of Ahmedabad city, Gujarat by Department of Paediatrics and Community Medicine of GMERS Medical College, Dharmapuri-Patan. A total of 2562 children among the age group of 10 to 15 years were observed after taking written informed agreement of their parents using predesigned, pre-tested, semi-structured Performa. Anthropometric measurements were taken and BMI was calculated. The prevalence of overweight and obesity was determined based on the IOTF (International Obesity Task Force) criteria. Many determinants of obesity and overweight were considered by interviewing children. Thus collected data were analyzed using SPSS 17 (Trial version).

Males were 54.09% and females were 45.9% Out of 2562 children. The prevalence of obesity and overweight was 5.62% and 9.99% respectively. The overall prevalence of obesity was more among the female population (6.8%) as compared to that in males (4.62%). The occurrence of obesity was found to be highest among 15 years' age group (8.22%). The prevalence of obesity and overweight was significantly higher amongst the less active group (9.3 % and 13.95%, respectively) as compared to a more active group. The prevalence of obesity and overweight was significantly higher in the group of children who spent >2 hours daily in front of the television or computers. The prevalence of obesity and overweight was significantly higher amongst the group of children who took daily calories above RDA (18.57% and 15.19% respectively) as compared to the other group. The prevalence of obesity and overweight was significantly higher in them (8.91% and 13.36%) as compared to those who took

junk food less than or equal to 2 times per week (1.71% and 5.98% respectively). The prevalence of obesity and overweight amongst children having parents with a history of obesity was 46.15% and 17.94%, respectively which was knowingly higher than those without a history of obesity (4.34% and 9.74%).

- This is particularly true in low and middle-income countries that form the major chunk of the global population. The emerging epidemics of obesity, cardiovascular disease, and diabetes form the crux of this phenomenal change. Among these units, obesity has become a colossal epidemic causing serious public health anxiety and contributes to 2.6 million deaths worldwide every year.

- The prevalence of obesity has improved worldwide in almost all country in all the age groups. The steep rise has prompted this development to be termed an epidemic and because it is worldwide a pandemic.

It has been estimated that worldwide over 22 million children below the age of 5 are obese, and one in 10 children is overweight. Globally the prevalence of childhood obesity varies from over 30% in the USA to less than 2% in Sub-Saharan Africa. Now, the occurrence of obese school children is 20% in the UK and Australia, 15.8% in Saudi Arabia, 15.6% in Thailand, 10% in Japan, and 7.8% in Iran. In China, the prevalence of obesity among children aged 7-9 years increased from 1-2% in 1985 to 17% among girls and 25% among boys in 2000.

- Indian data about current trends in childhood obesity are developing. Available studies of Delhi and Chennai have shown a prevalence of 7.4% and 6.2% respectively. An education conducted among adolescent school children in South Karnataka has presented the prevalence of overweight and obesity to be 9.9% and 4.8% respectively. The present study was a cross-sectional study undertaken in 10 schools, which were selected randomly from a list of all schools in Ahmedabad city from September 2015 to December 2015 by the Department of Paediatrics and Community Medicine of GMERS Medical College, Dharmapuri-Patan, Gujarat, India. All children between the age group of 10 -15 were included after written informed consent of their parents. The sample

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size was calculated based on an estimated prevalence of obesity of 8% by a pilot study, with 80% power, 95% confidence, and 5% level of significance with an allowable error of 20% to obtain age and gender-specific representative sample of children. 2400 school going children of age group 10- 15 years were the calculated sample size of the study but since all the children, studying in class 5th to 10th, of the selected schools, belonging to the 10 -15-year age group were included in the study population, the final sample size was 2562 children.

Overall, the total number of obese children identified in the whole study population was 144 (5.62%) and the numbers of overweight children were 256 (9.99%). The overall prevalence of obesity was more among the female population (6.8%) as compared to that in males (4.62%). Though the prevalence of overweight was more among males (10.25%). Different categories of BMI and gender of the children were not significantly associated.

The numbers of children with total sports-physical activity times per week ≤ 2 hr were only 430. The prevalence of obesity and overweight was significantly higher amongst the less active groups (9.3% and 13.95% respectively) as compared to the more active groups. The number of children, who spent above 2 hours in front of television or computers for any purpose, was 556 (21.7%). The prevalence of obesity and overweight was significantly higher (14.38% and 14.75%) amongst those who spent greater time in front of television or computers as compared to the other group who spent ≤ 2 hours in visible of TV or computers per day. The number of children with daily calorie intake $>$ RDA (Recommended Dietary Allowance) was 474 (22.7%). The prevalence of obesity and overweight was significantly higher amongst the group who took daily calories above RDA (18.57% and 15.19% respectively) as compared to the other group. The numbers of children taking junk foods more than twice a week were 1392 (54.33%).

Conclusion:

High occurrence of obesity and overweight in school children specify an urgent need to increase awareness via education and motivation of all stakeholders.

Note: This work is partly presented at World Congress on Paediatric Nutrition & Child Health May 13-14, 2019, Paris, France