

# Childhood Obesity - challenges in the Indian Scenario

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## Abstract

Globally, a sharp rise in the incidence of obesity has been noticed in last three decades. It has not only involved developed countries but also low income group developing countries.

**Key words:** Obesity, adolescent, global scenario

## Introduction

Of late, obesity has been increasing at an alarming rate among all age groups. The International Obesity Task Force (IOTF); World Health Organization (WHO) estimate of the prevalence of overweight (including obesity) among children aged 5-17 years is 10%. Developing countries like India are facing the peculiar situation of having to deal with both ends of the spectrum of nutritional disorders.

On one hand, mal (under)nutrition is an epidemic which has been in vogue for ages. In India, still around 46 per cent of all children below the age of three are too small for their age, 47 per cent are underweight and at least 16 per cent are wasted. Many of these children are severely malnourished[1].

On the other hand, over nutrition evident as overweight and obesity has been recently on the rise and is present in 20.6% of boys and 18.3% of girls [2]. In children, obesity is the most common nutritional disease in developed countries and in affluent class of developing countries. Obesity is a condition of excess body fat. There is no consensus definition for obesity. Weight alone is not a good indicator.

The most acceptable definition was given by IOTF/ WHO in terms of Body mass index (BMI) [3,4]. BMI is calculated by dividing weight in kilograms by the square of height in meters. BMI between 18.5 and 25 is normal and between 25(85th percentile) and 30(95th percentile) is overweight. Obesity is defined as BMI more than 30. In spite of the fact that BMI has drawbacks in the form of inability to differentiate between muscle and fat mass, it is advocated by most. BMI is also considered best for community based

studies owing to the ease of its use, without much expenditure [5]. Population specific BMI criteria for the Indian population are desirable, but are unavailable in India at present. WHO/IOTF cut offs need to be followed for population based studies till the time we develop such criteria.

## The global scenario

Globally, a sharp rise in the incidence of obesity has been noticed in last three decades. It has not only involved developed countries but also low income group developing countries. In developed countries like United States of America, the incidence is 35 % in boys and 35.9% in girls<sup>1</sup>. Similarly in UK it is 21.8% and 26.1% in boys and girls respectively.

In the Middle East, highest incidence is seen in UAE where one in five children is having either over weight/obesity. In a recent review from developed countries, prevalence of overweight youth was >15% in North America (Canada, Mexico and USA) and European countries (Germany, Italy) and 5-15% in France and Sweden. In China, overweight children account for 4.5 and 5.9% of boys and girls respectively.

Among African countries, prevalence is between 10-20% in South Africa and Nigeria [1].

In developing countries like Brazil (23.1 & 21.1%) and Chile (28.6 & 27.1%) also, prevalence is very high.

**Editorial****The Indian scenario**

Various studies over the last decades in India have shown that there is an increase in prevalence of overweight and obesity (Table 1). In a meta analysis of nine studies in which 92,862

subjects were identified and analysed, the prevalence of overweight was estimated to be 12.64% (95% CI 8.48-16.80%) and that of obesity to be 3.39% (95% CI 2.58-4.21%).

**Table 1: Prevalence of Overweight/Obesity in Indian Studies.**

No	Author(s)	Age Group	Total No. student	Location	Prevalence
1.	Deoke et al [6] (2012)	5-17	565	Nagpur	Overweight- 5.84% Obesity- 0.35%
2.	Misra et al [7] (2011)	8-18 years	29,244	Multicentric (India)	IOTF: Overweight- 14.4% Obesity- 2.8% WHO: Overweight- 18.5% Obesity- 5.3%
3.	Mahajan et al [8] (2011)	6-12 years	12,685	Puducherry	CDC: Overweight- 4.41 % Obesity- 2.21 % Boys: Overweight- 4.24 % Obesity- 1.97 % Girls: Overweight- 4.58 % Obesity- 2.29 %
4.	Vohra R et al [9] (2011)	10-18 years	407	Lucknow	WHO: Overweight- 4.17 % Obesity- 0.73%
5.	Chakroborty et Al [10] (2011)	5-18 years	979	Kolkata	Overweight- 5.43 % Obesity- 0.56 %
6.	Jain S et.al [11] (2010)	12-18 years	2785	Meerut	Boys: Overweight- 18.36 % Obesity- 10.82 % Girls: Overweight- 19.7 % Obesity- 5.3 %
7.	Premnath M et Al [12] (2010)	5-16 years	43,152	Mysore	IAP: Overweight- 8.5 % Obesity- 3.4 %
8.	Kumar HN et Al [13] (2008)	2-5 years	425	Manglore	WHO: Overweight- 4.5 % Obesity- 1.4 %
9.	Rebecca Kurian et al [14] (2007)	6-16 years	598	Banglore	IOTF: Overweight 6.4%
10.	Subramaniam et al [15] (2003)	10-15 years	707(1991) 610(1998)	Chennai	1991:Overweight-9.62 % Obesity- 5.94 % 1998: Overweight- 9.67 % Obesity- 6.23 %
11.	Sharma et al [16](2007)	4-17 years	4000	Delhi	Overweight- 22 % Obesity- 6 %
12.	Bose K, et al [17] (2007)	6-9 years	431	Kolkata	Overweight- 17.63 % Obesity- 6 %
13.	Ramchandran A, et al [18]. (2002)	13-18 years	2382	India	Overweight- Boys- 17.8 % Girls- 15.8 %

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Important determinants of childhood obesity include high socioeconomic status, urbanisation, female gender, unawareness and false beliefs about nutrition, marketing by transnational food companies, increasing academic stress, and poor facilities for physical activity. Obesity has far reaching consequences and is associated with type 2 diabetes mellitus, the early-onset metabolic syndrome, subclinical inflammation, dyslipidemia, coronary artery diseases, and adulthood obesity. Cardiovascular diseases-coronary artery disease and stroke –are the largest cause of deaths in India currently. Obesity has played an important role in increasing the number of patients with cardiovascular diseases [19]. Undeniably, the seeds are sown much early, in childhood.

India spends lesser amount of GDP for health care compared to most other countries. There is obvious lack of a focused policy towards non communicable diseases including obesity. Equipping the Indian healthcare system to deal with prevention and management of obesity along with other agendas is a Herculean task.

Considering the consequences of this epidemic, most importantly the increasing numbers of cardiovascular diseases, spreading word about and curbing this menace merits priority. Understandably, policy changes at the government level can take us a long way forward in this journey, and there is scientific evidence to support this [20,21].

There is an urgent need of increasing awareness about and sensitizing the policy makers, healthcare personnel and the community at large to the huge burden of dual malnutrition i.e. under nutrition and over nutrition that we are facing.

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