

Prevalence of overweight and obesity in paediatric outpatient population attending a Rural Hospital in Maval Taluka Maharashtra

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Abstract

Background and Objectives: The aim of this study was to find out the prevalence of overweight and obesity in Pediatric OPD population attending at Rural Hospital in Maval. **Methods:** The data were derived from cross – sectional sampling of children attending Pediatric OPD Total 2316 children were selected between age group 2 to 18 years in the year 2014. Age, gender and BMI were used to define overweight and obesity. **Result:** The overall prevalence rates of overweight and obesity were 3.8% and 1.2% respectively. The rate of overweight and obesity was lower when compared with different parts of India but was higher when compared with our neighbour developing countries. **Conclusion:** In our study it is observed that overweight and obesity also an upcoming problem in rural area as an extended spectrum of malnutrition. More in depth studies will be required to find out the etiological factors for the obesity and preventive measures should be taken to control this problem.

Keywords: Overweight, obesity, Maval, Maharashtra.

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INTRODUCTION

Childhood obesity is one of the most serious public health problem in 20th century.^{1,2} Traditionally, a fat child is considered as an attractive child, and is often referred to as a healthy child. However, the adverse and serious consequences of childhood obesity are now proven beyond doubt.³ Impact of childhood obesity is being observed in developing countries.^{4,5} Rising prevalence of obesity in India may be attributed to various factors, like sedentary life style, unhealthy food habits, cultural practices and increasing affluence of middle class population.^{6,7,8} An increase prevalence of obesity among

youth has been demonstrated across all age group and ethnicities. Information about the prevalence of obesity and overweight as well as risk factors for obesity is limited and inconsistent. Childhood obesity has become pandemic and has short term and long term adverse impact on health.⁹ Body mass index(BMI) for age is recommended internationally as the optimal, simple measure of obesity for public health surveillance and clinical application in children and adolescents.¹⁰ However, limited literature is available on prevalence of adolescents and childhood obesity in India. While under nutrition in children has been the major public health concern in India over the past several decades. Little attention has been paid to childhood overweight and obesity until recently. The Centre of Disease Control and Prevention defined obesity as at above the 95th percentile of BMI for age and sex.^{6,7} Obesity is not a single disorder but a heterogeneous group of conditions with multiple causes, but common to all is, overconsumption of calories and reduced physical activity. In the past obesity was considered a problem of affluent society, but now it is growing very fast in many developing countries.^{8,9}

MATERIALS AND METHODS

Approval from the institutional ethics committee was obtained. OPD based cross sectional study was conducted at rural hospital attached to MIMER Medical College in Pediatric OPD patients. Anthropometric measurement was undertaken in Pediatric OPD patient from period 1st Jan 2014 to 31st Dec 2014. Age group was selected from 2 to 18yr. Both male as well as female patients were included. Total 2,316 patients included in the study, out of these 1,339 were males and 977 were females. Anthropometric measurements were done utilizing the standard equipment and methodology. Weight was recorded using electronic weighing scale to nearest 100 grams and height was recorded using stadiometer

attached to the wall to the nearest 0.1 cm. All the measurements were done after removing shoes and loose outfits of the child. Body Mass Index was calculated as weight in kilograms/(height in meters)square.CDC 2000 Growth chart for united states was used. These criteria were based on the US national data collected in a series of 5 surveys between 1963 and 1994 for children and adolescents aged 2 to 20 year. Overweight and obesity is defined as BMI for age > 85 and >95 percentile respectively. We have followed international obesity task force criteria for our research. The entire data was Statistically analyzed using Statistical package for Social Sciences(SPSS Ver 12.0,Inc Chicago) for MS Windows.

RESULTS

Table 1: The age and sex specific distribution of prevalence of overweight and obesity

Age Group (years)	Sex	Normal		Overweight		Obese	
		No. of children	% of children	No. of children	% of children	No. of children	% of children
2 – 6	Male(n=841)	806	95.8	24	2.9	11	1.3
	Female(n=587)	554	94.4	21	3.6	12	2.0
6 – 10	Male(n=317)	303	95.6	12	3.8	2	0.6
	Female(n=250)	237	94.8	11	4.4	2	0.8
10 – 14	Male(n=159)	149	93.7	8	5.0	2	1.3
	Female(n=120)	110	91.7	10	8.3	0	0.0
14 – 18	Male(n=22)	22	100.0	0	0	0	0
	Female(n=20)	19	95.0	1	5.0	0	0
All	Male(n=1339)	1280	95.6	44	3.3	15	1.1
	Female(n=977)	920	94.2	43	4.4	14	1.4

Reference: Age and Sex Specific cut-offs; BMJ, Volume 320(2000)

Table no 1 Shows age wise and sex wise distribution. Maximum data was available between age group 2 to 6 years. Less data was available from 14 to 18 year age group.

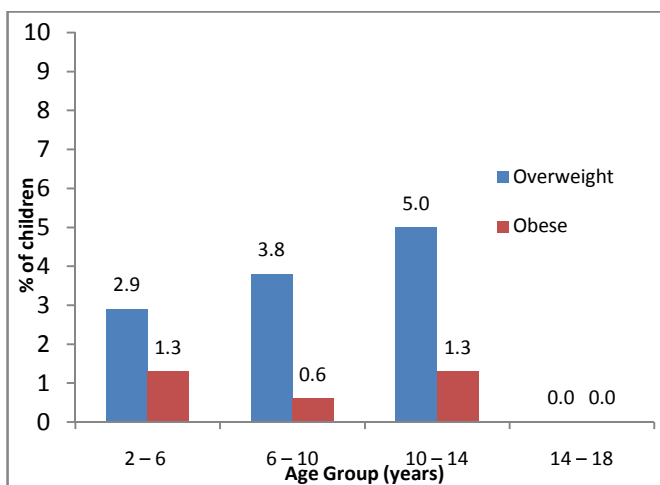


Figure 1a: The age and sex specific distribution of prevalence of overweight and obesity(Males only).

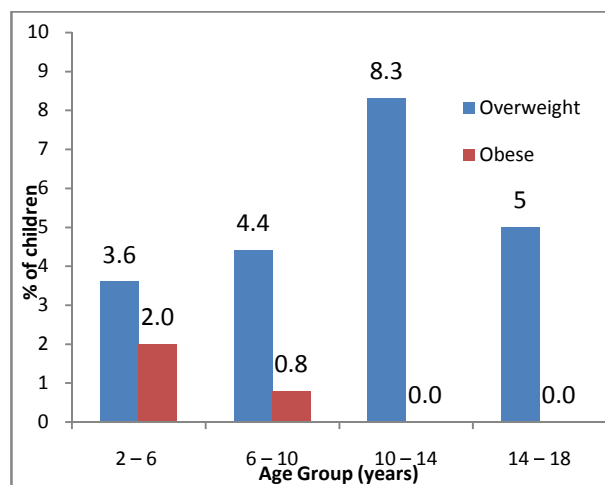


Figure 1b): The age and sex specific distribution of prevalence of overweight and obesity(Females only).

Figure 1 a and 1b age and sex specific distribution, according to this figure percentage of overweight was more in females as compare to male.

Table 2: The distribution of overall prevalence of overweight and obesity

Status	No. of children	% of children
Normal	2200	95.0
Overweight	87	3.8
Obese	29	1.2
Total	2316	100.0

Reference: Age and Sex Specific cut-offs; BMJ, Volume 320(2000)

DISCUSSION

The aim of the study was to estimate the prevalence of overweight and obesity among children 2 to 18 year old in the patient attending OPD at rural hospital Talegaon Tal – Maval Pune. In our study the prevalence of overweight was 3.8 % and obesity was 1.2%. The prevalence of overweight and obesity was 3.0 % and 2.6% in school children in a study of Keerthan Kumar *et al* Manipal¹ which was very closer to our study. In another study in public school of Ludhiana showed that 12.7% were overweight and 3.4 % was obese¹¹ which was more than our study. Prevalence of overweight and obesity in preschool age group between 2 to 6 yr was 6.5% and 3.3%. Data from nationally representative cross-sectional surveys from developing countries have shown a high prevalence of overweight in preschool children, including Uzbekistan at 14.4%(1996), Algeria at 9.2 %(1995), Egypt at 8.6 %(1996) whereas Bhutan at 2%(1988), Thailand at 1.2 %(1981), Bangladesh at 1.1 %(1997).¹² Comparing with our neighbour countries prevalence of overweight in rural area of our country is on higher side (Table no 1) Our study shows higher prevalence rates of overweight among girls and boys at age between 10 to 14 yr. The influence of gender and adolescences on obesity can be attributed to hormonal changes at the puberty and the development of secondary sexual characteristics resulting in fat accumulation and redistribution.¹³ In this study less number of data was available in age group between 14 to 18yrs and the of overweight are also less in this age group. In our study total prevalence overweight and obesity in male was 3.3 % and 1.1 % and in female it was 4.4 % and 1.4 % (Table no 1). Age adjusted prevalence of overweight was found to be 14.3 % among boys and 9.2 % among girls were as the prevalence of obesity was 2.9 % in boys and 1.5 % in girls by Goyal *et al*.¹⁴ Our study has a few limitations as our hospital is rural hospital most of the patients attending the OPD was from lower socioeconomic status. So considering the prevalence of overweight and obesity in this group it may be on higher side in upper socioeconomic status. Another limitation was that only

BMI was used to determine the overweight and obesity prevalence. We used CDC 2000 Cut –off which was of international standard, probably if we compare it with Indian Cut – off standard the prevalence may be on higher side. Childhood obesity is associated with higher chance of obesity, type 2 Diabetes, Hypertension, Hyperlipidemia, coronary disease and disability in adulthood. In additions to increase future risks, obese children experience breathing difficulties, insulin resistance and psychological effects.¹⁵ In India there is paucity of data on childhood obesity more so in rural area which is an emerging health challenge. Further in depth studies are required in this area so that timely measures can be taken to overcome this problem in childhood.

CONCLUSION

In our study it is observed that overweight and obesity also isan equally upcoming problem in rural area in addition to malnutrition. More in depth studies will be required to find out the etiological factors for the obesity and preventive measures should be taken to control this problem.

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