

Adolescent obesity, a growing concern among the semi-urban population–Rajasthan India

Santosh Kumar Gupta

State Consultant-Immunization, Raipur, Chhattisgarh, India

Submission: 10-07-2016

Revision: 18-08-2016

Publication: 30-09-2016

Address for Correspondence:

Dr. Santosh Kumar Gupta.

State Consultant-Immunization,
Raipur, Chhattisgarh, India.

E-mail: drsantosgupta@gmail.com

How to cite this article:

Gupta S K. Adolescent obesity, a growing concern among the semi-urban population – Rajasthan India. IntJMRP 2016;1(2):07–09.

ABSTRACT

Adolescent obesity has reached epidemic levels in developed as well as in developing countries. In general, overweight and obesity are assumed to be the results of an increase in caloric and fat intake. On the other hand, there are supporting evidences that excessive sugar intake by soft drink, increased portion size, and steady decline in physical activity have been playing major roles in the rising rates of obesity all around the world. Consequently, both over-consumption of calories and reduced physical activities are involved in childhood obesity. Obesity is a multifactorial disorder, which is often associated with many other significant diseases such as diabetes, hypertension and other cardiovascular diseases, osteoarthritis, and certain cancers. The management of obesity will therefore require a comprehensive range of strategies focusing on those with existing weight problems and also on those at high risk of developing obesity. Hence, prevention of obesity during childhood and during adolescence should be considered as a priority, as there is a risk of persistence to adulthood. The aim of the present study was to assess the prevalence of obesity among the adolescent population of Pilani, India and do risk factor assessment for the same. Another aim was to assess the nutritional status of school children and also to compare the obesity between gender and between the residential and non-residential schools.

Key words: Adolescent obesity, Body mass index (BMI), Overweight, Hypertension, WHO, UNICEF, COR

INTRODUCTION

“Tummy fat and inactivity has pushed up hypertension in city children 5 fold in as many years”. This is one of the alarming finding in our Indian kids. It was reported in a newspaper by a study conducted by archives of disease in childhood. Till date we had relied on the assumption of checking blood pressure only after the age of 16 or 18 years unless and until any special need arises. But this finding sets us back to think. There are some changes in monitoring of blood pressure which now states to check it at the age of 6 or as soon as child walks into the clinic especially if there is a family history of the disease.

Childhood overweight and obesity are global problems that are on rise. Obesity is evolving as a major nutritional problem in developing countries, affecting a substantial number of adults and resulting in an increased burden of chronic disease.¹ In national surveys conducted in the USA from the 1960s to the 1990s, the prevalence of overweight in children increased from 5% to 11%.² In a study conducted on school children in Ernakulam, Kerala, over a period of

2 years from 2003 to 2005 to know the time trends and to explore the hypertension, it was found that the proportion of overweight children increased from 4.94% of the total students in 2003 to 6.57% in 2005.

Distinguishing feature of an adolescent obesity is an above average weight in comparison to their height. Some of the factors contributing to adolescent obesity include; junk food in schools, excessive snacking, poor dietary patterns, and lack of physical exercise. The dietary patterns of children today have changed compared to what they were 30 years ago. More and more families are headed by a single parent or two-parent families with both parents that work. The readily available junk food in vending machines, which are being put in our schools, makes it very easy for children to snack throughout the day on high calorie non-nutritious foods. A study conducted by Cfore and Hindustan times reported that more than 60% of Indian kids consuming junk food daily and another study by Associated Chambers of Commerce and Industry of India reports 52% of 8–11 year olds spend over 5h online daily. Following are the main objectives of the present study:

- To check the prevalence, do risk factor assessment of obesity in the preadolescent and adolescent population of Pilani (Rajasthan).
- Assessment of nutritional status of school children.
- To compare obesity between gender and between the residential and non-residential schools.

The reason that has to be considered about rising rate of obesity is because children with obesity have a fairly high rate of becoming overweight or obese adults. Teens that are overweight have a 70% chance of carrying this weight into adulthood and the risk goes up to 80% for children with one obese parent.

METHODS AND MATERIALS

The study was conducted with a sample size of 720 respondents from four different schools in Pilani. The selection of schools included both residential and non-residential schools and boy's and girl's schools. Two Questionnaires

were designed to achieve the aim of the study and along with interviewing the respondent some anthropometric measurements like height, weight, waist circumference, and hip circumference were also performed. An apparatus "Inner Scan" was used for the purpose of calculating the body fat percentage. After the data collection it was entered separately for all the schools and analyzed using Microsoft excel with all possible combinations. The data was analyzed for overall subjects, gender wise, age group wise, and according to the type of school.³⁻¹⁰

RESULTS

Prevalence of obesity

Table 1 shows the prevalence of obesity.

Food habits among adolescents

Table 2 shows the food habits among adolescents.

Table 1: Prevalence of obesity

	Percentage of obesity
With BMI as diagnostic criteria	
• Complete sample	13
• Adolescent girls	18
• Adolescent boys	4.25
• Age group of 10–13 years	2.37
• Age group of 14–15 years	15.54
• Age group of 16–18 years	20.09
• Adolescents of residential schools	17.34
• Adolescents of non-residential schools	2.52
With body fat percentage as diagnostic criteria	
• Complete sample	35
• Adolescent girls	25.11
• Adolescent boys	7.99
• Age group of 10–13 years	9.12
• Age group of 14–15 years	22.9
• Age group of 16–18 years	24.01
• Adolescents of residential schools	25.2
• Adolescents of non-residential schools	3.85

BMI: body mass index.

Table 2: Food habits among adolescents

	Convenience food (%)	Prepared food (%)	Eating when in stress (%)	Snack often (%)
• Complete sample	47.49	66.57	22.84	51.94
• Adolescents of residential schools	43.76	67.76	79.13	51.23
• Adolescents of non-residential schools	44.81	64.8	23.5	55.12
• Boys	49.31	61.81	26.39	49.31
• Girls	46.28	69.77	25.12	53.72

CONCLUSION

To conclude, the prevalence of obesity in the adolescent population of Pilani, India is around 13% if considered according to body mass index. While taking body fat percentage as the diagnostic criteria the prevalence is around 35%. Girls have a higher rate of prevalence than boys with 18% and 4.25%, respectively, according to body mass index. With the diagnostic criteria of body fat percentage the prevalence of obesity in girls and boys is 49% and 16%, respectively. The students in the residential schools have a higher rate of obesity when compared to the students of non-residential schools.

REFERENCES

1. World Health Organization. Preventing Chronic Diseases: A Vital Investment. World Global Report. Geneva: World Health Organization, 2005.
2. Ogden CL, Troiano RP, Briefel RR, Kuczmarski RJ, Flegal KM and Johnson CL. Prevalence of overweight among preschool children in the United States, 1971 through 1994. *Pediatrics* 1997;99:E1.
3. Manu Raj, Sundaram K, Mary Paul, Deepa AS and Krishna Kumar R. Obesity in Indian children: time trends and relationship with hypertension. *Natl Med J India* 2007;20(6):288–293.
4. Infant and adult obesity. *Lancet* 1974;1:17–18.
5. Chopra M, Galbraith S and Darnton-Hill I. A global response to a global problem: the epidemic of overnutrition. *Bull World Health Organ* 2002;80:952–958.
6. Yusuf S, Hawken S, Ounpuu S, Dans T, Avezum A, Lanas F, et al. INTERHEART Study Investigators. Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries case-control study. *Lancet* 2004;364:937–952.
7. Schorr U, Blaschke K, Turan S, Distler A and Sharma AM. Relationship between angiotensinogen, leptin and blood pressure levels in young normotensive men. *J Hypertens* 1998;16:1475–1480.
8. Kannel WB, Garrison RJ and Dannenberg AL. Secular blood pressure trends in normotensive persons: the Framingham Study. *Am Heart J* 1993;125:1154–1158.
9. Stamler R, Shipley M, Elliott P, Dyer A, Sans S and Stamler J. Higher blood pressure in adults with less education. Some explanations from INTERSALT. *Hypertension* 1992;19:237–241.
10. Shanthirani CS, Pradeepa R, Deepa R, Premalatha G, Raghavan S and Mohan V. Prevalence and risk factors for hypertension in a selected South Indian Population – The Chennai Urban Population Study. *J Assoc Physicians India* 2003;51:20–27.

Source of Support: Nil. **Conflict of Interest:** None declared.