

Prevalence of obesity among school children of age group 5-10 years.

Sharad Kumar Singh¹, Manju Tripathi¹

¹Assistant Professor, Department of Pediatrics, Prasad Institute of Medical Sciences, Banthara, Lucknow.

Received: February 2019

Accepted: February 2019

Copyright: © the author(s), publisher. It is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Childhood obesity is a precursor to obesity and other non-communicable diseases in adulthood. Obesity is associated with an increased risk of morbidity and mortality as well as reduced life expectancy. The objective of the study was to assess the prevalence of obesity among school children of age group 5-10 years. **Methods:** The study was conducted among 90 children of age group 5-10 years. Before the commencement of the study informed consents was signed by the parents. Anthropometric measurements were performed by well-trained health professionals. Height without shoes was measured using metal column height-measuring stands to the nearest 0.1 cm. Weight was measured using lever scales to the nearest 0.1 kg while the subjects wore their light clothes. Body mass index (BMI) was calculated from their height and weight (kg/m²). The BMI cutoff points recommended by the International Obesity Task Force were used to define overweight and obesity.⁸ Statistical analysis was done by using SPSS, version 22 (SPSS, Inc., Chicago, IL) and p<0.05 was considered statistically significant. **Results:** The sample size of 90 patients was selected for the study in which 50 were girls whereas 40 were boys. The children were divided according to different age groups. First age group include children between age of 5 to 7 years whereas in second age group children of age group 8 to 10 years were included. In age group 5- 7 years 24 were boys and 29 were girls. In age group 8-10 years 16 were boys and 21 were girls. The presence of obesity in age group 5-7 years was more in girls i.e., 62.06%. The obesity in age group 8-10 years was prevalent in girls i.e., 47.61%. **Conclusion:** Health education regarding prevention of obesity should be given to parents to assess healthier lifestyle motivation among their children.

Keywords: Childhood obesity, Body mass index, healthier lifestyle.

INTRODUCTION

The term overweight means excess body weight for a particular height whereas the term obesity is used to define excess body fat.^[1] Overweight and obesity primarily occurs either due to excess calorie intake or insufficient physical activity or both. Various other factors like genetic, behavioural, and environmental factors play a role in its pathogenesis. Childhood obesity is a precursor of metabolic syndrome, poor physical health, mental disorders, respiratory problems and glucose intolerance, all of which can track into adulthood.^[2] Obesity has been linked to socioeconomic status in different age groups.^[3,4] In industrial and developed countries, lower socioeconomic groups are more likely to be obese than those with higher socioeconomic status; while in developing countries, high socioeconomic groups are more vulnerable to obesity.^[4] The childhood obesity significantly contributes to related

adverse health problems, such as dyslipidemia, hypertension, cardiovascular disease, insulin resistance or diabetes, asthma, fatty liver disease, and psychosocial complications.^[5-7] This objective of this study was to assess the prevalence of obesity among children of age group 5-10 years.

MATERIALS AND METHODS

The study was conducted among 90 children of age group 5-10 years. The study was approved by the Ethical Committee. Before the commencement of the study informed consents was signed by the parents. Anthropometric measurements were performed by well-trained health professionals. Height without shoes was measured using metal column height-measuring stands to the nearest 0.1 cm. Weight was measured using lever scales to the nearest 0.1 kg while the subjects wore their light clothes. Body mass index (BMI) was calculated from their height and weight (kg/m²). The BMI cutoff points recommended by the International Obesity Task Force were used to define overweight and obesity.⁸ Statistical analysis was done by using SPSS, version 22 (SPSS, Inc., Chicago, IL) and p<0.05 was considered statistically significant.

Name & Address of Corresponding Author

Dr Manju Tripathi
Assistant Professor,
Department of Pediatrics,
Prasad Institute of Medical Sciences,
Banthara, Lucknow.

RESULTS

The sample size of 90 patients was selected for the study in which 50 were girls whereas 40 were boys. The children were divided according to different age groups. First age group include children between age of 5 to 7 years whereas in second age group children of age group 8 to 10 years were included. In age group 5- 7 years 24 were boys and 29 were girls. In age group 8-10 years 16 were boys and 21 were girls. The presence of obesity in age group 5-7 years was more in girls i.e., 62.06%. The obesity in age group 8-10 years was prevalent in girls i.e., 47.61%.

Table 1: Distribution of gender.

Gender	N(%)	p-value
Male	40(44.44%)	<0.05
Female	50(55.55%)	
Total	90(100%)	

Table 2: Distribution of gender according to age group

Age group	Gender	
	Boys	Girls
5-7 years old	24	29
8-10 years old	16	21

Table 3: prevalence of obesity in different age group of school children

Age group	Gender	Number of children with obesity
5-7 years	Boys	14(58.33%)
	Girls	18(62.06%)
8-10 years	Boys	6(37.5%)
	Girls	10(47.61%)

DISCUSSION

The prevalence of obesity is high in developing countries and countries with poor welfare systems, such as India,^[9,10] Pakistan,^[11] and other South Asian as well as African countries.^[12] The prevalence of obesity in these countries has risen sharply since 1990, along with their increasing economic development.^[12] Along with changes in lifestyle and industrialization,^[13,14] childhood obesity is considerably increasing globally.^[13,15] In our study the sample size of 90 patients was selected for the study in which 50 were girls whereas 40 were boys. The children were divided according to different age groups. First age group include children between age of 5 to 7 years whereas in second age group children of age group 8 to 10 years were included. In age group 5- 7 years 24 were boys and 29 were girls. In age group 8-10 years 16 were boys and 21 were girls. The presence of obesity in age group 5-7 years was more in girls i.e., 62.06%. The obesity in age group 8-10 years was prevalent in girls i.e., 47.61%. Zhang YX et al shows the result that for urban children and adolescents aged 7–18 years, the prevalence of overweight and obesity increased from 2.94 and 0.08% for boys and 2.21 and 0.05% for girls in 1985 to 22.32 and 9.42% for boys and 15.49

and 4.19% for girls in 2014, respectively ($p < 0.01$). For rural children and adolescents, these figures increased from 0.54 and 0.03% for boys and 0.98 and 0.03% for girls in 1985 to 19.32 and 11.37% for boys and 16.12 and 4.51% for girls in 2014, respectively ($p < 0.01$).^[16]

In a study conducted by Ramachandran et al.^[3] on Southern Indian children, the prevalence of overweight (BMI >25) was found to be 17.8% in boys and 15.8% in girls, whereas obesity (>30 kg/m²) was higher in boys (3.6%) and rare in girls (2.9%).^[17]

Verma et al conducted a study and reveal that the prevalence of overweight obese children was 7.5%. The prevalence of obesity was maximum in 18-year age group (15%) and minimum in 15 years of age group (3.2%). Obesity was more in male children than female children.^[18]

In a study of Zhang X et al the prevalence of obesity among primary school children was 11.7% (14.5% for male students and 8.2% for female students) respectively.^[19]

Salehiniya H et al shows that the prevalence of obesity in children was 23.7%. The prevalence of obesity was significantly higher in boys than girls (P = 0.001). Obesity was more prevalent in children from high economic percentiles, but this finding was not statistically significant.^[20]

CONCLUSION

Consumption of Junk food, dietary habits, sedentary lifestyle and easy modes of transport to school are the contributors that give rise to the higher prevalence of obesity in children. Health education regarding prevention of obesity should be given to parents to assess healthier lifestyle motivation among their children.

REFERENCES

1. National Institutes of Health, National Heart, Lung, and Blood Institute. Disease and Conditions Index: what are overweight and obesity? [accessed on December 8, 2013]. Available from: <http://www.nhlbi.nih.gov/health/health-topics/topics/obe/>
2. Centers for Disease Control and Prevention (CDC), Fact sheets. [accessed on November 22, 2013]. Available from: <http://www.cdc.gov/healthyyouth/obesity/facts.htm> .
3. Sundquist J, Johansson SE. The influence of socioeconomic status, ethnicity and lifestyle on body mass index in a longitudinal study. *Int J Epidemiol.* 1998;27(1):57–63.
4. Zhang Q , Wang Y. Trends in the association between obesity and socioeconomic status in U.S. adults: 1971 to 2000. *Obes Res.* 2004;12(10):1622–32.
5. Daniels SR. Complications of obesity in children and adolescents. *INT J OBESITY* 2009;33 Suppl 1(33 Suppl 1):S60.
6. Barros R, Moreira P, Padrão P, Teixeira VH, Carvalho P, Delgado L, et al. Obesity increases the prevalence and the incidence of asthma and worsens asthma severity. *CLIN NUTR* 2016.
7. Mokdad AH, Ford ES, Bowman BA, Dietz WH, Vinicor F, Bales VS, et al. Prevalence of obesity, diabetes, and obesity-related health risk factors, 2001. *Jama the Journal of the*

- American Medical Association 2003;289(1):76–9.
pmid:12503980
8. Ogden CL, Carroll MD, Kit BK, et al. Prevalence of obesity and trends in body mass index among US children and adolescents, 1999–2010. *JAMA* 2012;307:483–90.
 9. Kumar HN, Mohanan P, Kotian S, Sajjan BS, Kumar SG. Prevalence of overweight and obesity among preschool children in semi urban South India. *Indian Pediatr.* 2008;45(6):497–49.
 10. Kaur S, Sachdev HP, Dwivedi SN, Lakshmy R, Kapil U. Prevalence of overweight and obesity amongst school children in Delhi, India. *Asia Pac J Clin Nutr.* 2008;17(4):592–6.
 11. Mushtaq MU, Gull S, Abdullah HM, Shahid U, Shad MA, Akram J. Prevalence and socioeconomic correlates of overweight and obesity among Pakistani primary school children. *BMC Public Health.* 2011;11:724.
 12. de Onis M, Blossner M, Borghi E. Global prevalence and trends of overweight and obesity among preschool children. *Am J Clin Nutr.* 2010;92(5):1257–64.
 13. Wang Y, Monteiro C, Popkin BM. Trends of obesity and underweight in older children and adolescents in the United States, Brazil, China, and Russia. *Am J Clin Nutr.* 2002;75(6):971–7.
 14. Kelishadi R. Childhood overweight, obesity, and the metabolic syndrome in developing countries. *Epidemiol Rev.* 2007;29:62–76
 15. Wang Y, Lobstein T. Worldwide trends in childhood overweight and obesity. *Int J Pediatr Obes.* 2006;1(1):11–25.
 16. Zhang YX, Wang ZX, Zhao JS, Chu ZH. Prevalence of Overweight and Obesity among Children and Adolescents in Shandong, China: Urban–Rural Disparity. *Journal of tropical pediatrics.* 2016 Mar 10;62(4):293-300.
 17. Ramachandran A, Snehalatha C, Vinitha R, et al. Prevalence of overweight in urban Indian adolescent school children. *Diabetes Res Clin Pract* 2002;57(3):185-90
 18. Verma V, Bagri DR, Sharma VK, Barouha R, Haque FA. Predictors of prevalence of overweight and obesity in children. *Int J Stud Res* 2015;5:28-33
 19. Zhang X, Zhang F, Yang J, Yang W, Liu W, Gao L, et al. (2018) Prevalence of overweight and obesity among primary school-aged children in Jiangsu Province, China, 2014-2017. *PLoS ONE* 13(8): e0202681. <https://doi.org/10.1371/journal.pone.0202681>
 20. Salehiniya H, Yazdani K, Barekati H, Lari MA. The prevalence of overweight and obesity in children under 5 years in Tehran, Iran, in 2012: A Population-Based Study. *Research in cardiovascular medicine.* 2016 Feb;5(1).

How to cite this article: Singh SK, Tripathi M. Prevalence of obesity among school children of age group 5-10 years. *Ann. Int. Med. Den. Res.* 2019; 5(2):PE29-PE31.

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