e-ISSN: 0975-9506, p-ISSN:2961-6093

Available online on www.ijpqa.com

International Journal of Pharmaceutical Quality Assurance 2025; 16(8); 216-219

Original Research Article

Prevalence of Overweight and Obesity among School Children

Sankar Narayan Mishra[1], Sayantani Panda[2], Bidyut Kumar Khuntdar[3]

[1]Senior Resident Doctor, Department of Paediatrics, Tamralipto Government Medical College and Hospital, Tamluk, West Bengal 721636

[2]Junior Resident Doctor, Department of Community medicine, Nil Ratan Sarkar Medical College and Hospital, Kolkata, West Bengal 700014

[3]Professor and Head of the Department, Tamralipto Government Medical College and Hospital, Tamluk, West Bengal 721636

Received: 25-06-2024 / Revised: 23-07-2025 / Accepted: 18-08-2025

Corresponding Author: Dr. Sayantani Panda

Conflict of interest: Nil

Abstract:

Introduction: Overweight and obesity among school-aged children have emerged as a significant public health concern worldwide. The increasing prevalence of these conditions is associated with a range of adverse health outcomes, including early onset of cardiovascular diseases, type 2 diabetes mellitus, and psychosocial problems.

Aims and Objectives: The aim of the study is to assess the prevalence of overweight and obesity among school children aged 6 to 14 years. The objectives include determining the distribution of overweight and obesity by age, gender, and school type, and identifying associated risk factors.

Materials and Methods: The study was conducted in the Department of Paediatrics, Outpatient Services, Tamralipta Government Medical College, Tamluk, West Bengal 721636, over a period from March 2024 to February 2025. The study population comprised school children aged 6 to 14 years from selected government and private schools. Children with chronic illnesses or conditions affecting growth were excluded to ensure accurate assessment of overweight and obesity prevalence. A total of 120 children were randomly selected and included in the study.

Result: A study of 120 school children aged 6–14 years found that 20.8% were overweight and 12.5% were obese, with a slightly higher prevalence among Boys (35.4%) than Girls (30.9%). The risk of overweight and obesity increased with age, reaching 45.7% in the 12–14 years age group.

Conclusion: The study reveals a substantial presence of overweight and obesity among school children, indicating a growing public health concern. The prevalence of excess weight was found to be higher among Boys compared to Girls and showed an increasing trend with age.

Keywords: Overweight, Obesity, School children, Prevalence, BMI.

Introduction

Overweight and obesity among school-aged children have emerged as a significant public health concern worldwide. The increasing prevalence of these conditions is associated with a range of adverse health outcomes, including early onset of cardiovascular diseases, type 2 diabetes mellitus, and psychosocial problems [1,2]. According to the World Health Organization (WHO), the global prevalence of overweight and obesity in children and adolescents aged 5–19 years has risen dramatically from just 4% in 1975 to over 18% in 2016. This alarming trend is evident in both developed and developing countries, reflecting changes in lifestyle, dietary patterns, and reduced physical activity [3]. In India, studies report varying prevalence rates due to diverse socioeconomic, cultural, and regional factors, with some urban areas documenting overweight and obesity rates as high as 20% among school children [4]. Early identification of overweight and obesity is crucial to prevent long-term health complications and to implement effective intervention strategies targeting this vulnerable population [5].

Study Area

Department of Paediatrics, Outpatient Services, Tamralipta Government Medical College, Tamluk, West Bengal 721636

Study Population

The study included school children aged 6 to 14 years from selected government and private schools. Children with chronic illnesses or conditions affecting growth were excluded to ensure accurate assessment of overweight and obesity prevalence.

Study Period

From March 2024 to February 2025

Sample Size

120 randomly selected patients

Inclusion Criteria

- Children aged 6 to 14 years.
- Enrolled in selected government or private schools.
- Present on the day of data collection.
- Parents or guardians provided informed consent.

Exclusion Criteria

- Children with chronic illnesses affecting growth or weight (e.g., endocrine disorders).
- Children with physical disabilities limiting accurate anthropometric measurements.
- Those on long-term medication influencing body weight.
- Children absent on the day of data collection.

Study Design

Cross-sectional descriptive study

Study Tools

- Structured Questionnaire
- Anthropometric Equipment
- WHO Growth Charts or BMI-for-age Percentile Charts
- Consent Forms

Statistical Analysis

Data were entered into Excel and analyzed using SPSS and GraphPad Prism. Numerical variables were summarized using means and standard deviations, while categorical variables were described with counts and percentages.

Two-sample t-tests were used to compare independent groups, while paired t-tests accounted for correlations in paired data.

Chi-square tests (including Fisher's exact test for small sample sizes) were used for categorical data comparisons. P-values ≤ 0.05 were considered statistically significant.

Result

Table 1: Demographic Characteristics of Study Population

	Characteristic	Number of Children	Percentage (%)
Age Group (years)	6 – 8	40	33.3
	9 – 11	45	37.5
	12 – 14	35	29.2
Gender	Boy	65	54.2
	Girl	55	45.8
School Type	Government	70	58.3
	Private	50	41.7

Table 2: Distribution According to BMI Categories

BMI Category	Number of Children	Percentage (%)
Underweight	10	8.3
Normal Weight	70	58.3
Overweight	25	20.8
Obese	15	12.5

Table 3: Gender-wise Distribution of Overweight and Obesity

Gender	Overweight (n, %)	Obese (n, %)	Total Overweight & Obese (n, %)
Boy	15 (23.1%)	8 (12.3%)	23 (35.4%)
Girl	10 (18.2%)	7 (12.7%)	17 (30.9%)

Table 4: Age-wise Prevalence of Overweight and Obesity

Age Group (years)	Overweight (n, %)	Obese (n, %)	Total Overweight & Obese (n, %)
6 – 8	6 (15%)	2 (5%)	8 (20%)
9 – 11	10 (22.2%)	6 (13.3%)	16 (35.5%)
12 – 14	9 (25.7%)	7 (20%)	16 (45.7%)

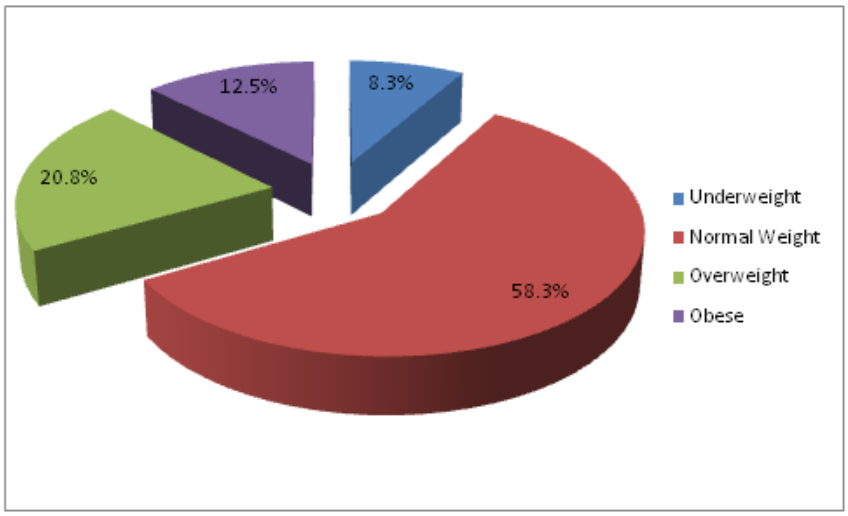

Figure 1: Distribution According to BMI Categories

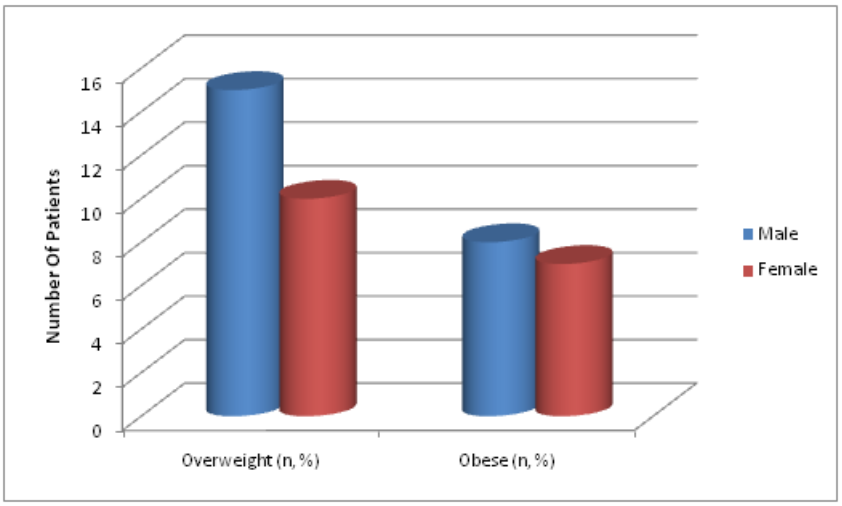

Figure 2: Gender-wise Distribution of Overweight and Obesity

A total of 120 school children participated in the study. The age distribution showed that 33.3% (n=40) were between 6 and 8 years, 37.5% (n=45) were between 9 and 11 years, and 29.2% (n=35) were between 12 and 14 years. Regarding gender, Boys constituted 54.2% (n=65) of the study population, while Girls accounted for 45.8% (n=55). In terms of school type, a majority of children, 58.3% (n=70), were enrolled in government schools, whereas 41.7% (n=50) attended private schools.

Among the 120 school children assessed, 8.3% (n=10) were classified as underweight, while the majority, 58.3% (n=70), had a normal weight. The prevalence of overweight children was 20.8% (n=25), and 12.5% (n=15) of the children were categorized as obese. These findings highlight a significant burden of excess weight in the study population.

When analyzed by gender, 23.1% (n=15) of Boys were overweight and 12.3% (n=8) were obese, resulting in a combined prevalence of 35.4% (n=23) for overweight and obesity among boys. Among Girls, 18.2% (n=10) were overweight and 12.7% (n=7) were obese, with a total overweight and obesity prevalence of 30.9% (n=17). The data indicate a slightly higher burden of overweight and obesity in Boys compared to Girls in this study population. The prevalence of overweight and obesity increased with age among the school children. In the 6–8 years age group, 15% (n=6) were overweight and 5% (n=2) were obese, totaling 20%. Among children aged 9–11 years, 22.2% (n=10) were overweight and 13.3% (n=6) were obese, with a combined prevalence of 35.5%. The highest prevalence was observed in the 12–14 years age group, where 25.7% (n=9) were overweight and 20% (n=7) were obese, totaling 45.7%. This trend suggests that the risk of overweight and obesity increases with advancing age in this population.

Discussion

This study highlights a considerable prevalence of overweight (20.8%) and obesity (12.5%) among school children aged 6 to 14 years, with an overall combined burden of 33.3%. The prevalence of

overweight and obesity was slightly higher in Boys (35.4%) compared to Girls (30.9%), and the risk increased with age, peaking at 45.7% in children aged 12–14 years. These findings align with global trends demonstrating rising childhood obesity, especially in urban and semi-urban settings. Similar prevalence rates have been reported in various studies worldwide. Furthermore, a study in Brazil by Kendall-Tackett K et al. documented an overweight/obesity prevalence of 28.4% among school-aged children, with higher rates among Boys and adolescents [6].The gradual increase in overweight and obesity with age observed in our study could be attributed to lifestyle changes such as reduced physical activity and increased consumption of calorie-dense foods during adolescence, as also reported by Singh et al. [7].

The gender disparity, with Boys showing a slightly higher burden, is consistent with findings from a study in urban South Africa, where Oyetunji IO et al. found Boys were more likely to be overweight or obese due to differential physical activity patterns and cultural factors [8]. Comparatively, some studies report lower prevalence rates, reflecting regional and socioeconomic differences. However, even in such low-prevalence regions, an upward trend has been documented, indicating a growing public health challenge [9]. The implications of this rising burden are profound. Childhood obesity is a well-established risk factor for metabolic syndrome, type 2 diabetes, hypertension, and cardiovascular diseases later in life [10]. Early intervention strategies focusing on dietary modifications, increased physical activity, and health education are therefore critical. Our study reinforces the urgent need for targeted public health policies in India and similar settings to curb the increasing trend of overweight and obesity among school children. Consistent with global findings, the transition in diet and sedentary behavior plays a key role in this epidemic [11].

Conclusion

The study reveals a substantial presence of overweight and obesity among school children, indicating a growing public health concern. The prevalence of excess weight was found to be higher among Boys compared to Girls and showed an increasing trend with age.

These findings underscore the urgent need for early identification and intervention strategies focused on promoting healthy lifestyles, balanced nutrition, and regular physical activity in school-aged children to curb the escalating burden of childhood overweight and obesity.

Reference

1. Daniels SR. The consequences of childhood overweight and obesity. The future of children. 2006;16(1):47-67.
2. Reilly JJ, Kelly J. Long-term impact of overweight and obesity in childhood and adolescence on morbidity and premature mortality in adulthood: systematic review. International journal of obesity. 2011 Jul;35(7):891-8.
3. Lobstein T, Jackson-Leach RJ. Planning for the worst: estimates of obesity and comorbidities in school-age children in 2025. Pediatric obesity. 2016 Oct;11(5):321-5.
4. Gupta N, Goel K, Shah P, Misra A. Childhood obesity in developing countries: epidemiology, determinants, and prevention. Endocrine reviews. 2012 Feb 1;33(1):48-70.
5. Pulgarón ER. Childhood obesity: a review of increased risk for physical and psychological comorbidities. Clinical therapeutics. 2013 Jan 1;35(1):A18-32.
6. Kendall-Tackett K. Depression in new mothers: Causes, consequences and treatment alternatives. Routledge; 2016 Sep 5.
7. Singh AS, Mulder C, Twisk JW, Van Mechelen W, Chinapaw MJ. Tracking of childhood overweight into adulthood: a systematic review of the literature. Obesity reviews. 2008 Sep; 9(5):474-88.
8. Oyetunji IO. Nutritional and health status of HIV+ adults stable on HAART attending a healthcare facility in Cape Town, South Africa.
9. Jaacks LM, Vandevijvere S, Pan A, McGowan CJ, Wallace C, Imamura F, Mozaffarian D, Swinburn B, Ezzati M. The obesity transition: stages of the global epidemic. The lancet Diabetes & endocrinology. 2019 Mar 1;7(3):231-40.
10. Pulgarón ER. Childhood obesity: a review of increased risk for physical and psychological comorbidities. Clinical therapeutics. 2013 Jan 1;35(1): A18-32.
11. Ng M, Fleming T, Robinson M, Thomson B, Graetz N, Margono C, Mullany EC, Biryukov S, Abbafati C, Abera SF, Abraham JP. Global, regional, and national prevalence of overweight and obesity in children and adults during 1980–2013: a systematic analysis for the Global Burden of Disease Study 2013. The lancet. 2014 Aug 30;384(9945):766-81.