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Prevalence and Associated Factors of Obesity in Children Aged 2-11 Years at a Tertiary Care Hospital in Islamabad

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ABSTRACT

Childhood obesity is a rising health concern globally, with an increasing trend in many low middle-income countries like Pakistan, due to rapid urbanization and lifestyle changes like unhealthy dietary practices and lack of physical activity. **Objectives:** To find out the prevalence of obesity and some associated variables, such as demographic, socioeconomic, and lifestyle factors, among the children aged 2 to 11 years visiting a tertiary care hospital in Islamabad, Pakistan. **Methods:** The descriptive cross-sectional study was conducted from May 10, 2024, to November 10, 2024, at the Pediatric Department of the Avicenna Medical Complex in Islamabad. 220 children aged 2-11 years were recruited using consecutive sampling. Obesity was defined as a BMI ≥ +2SD on WHO percentile charts, and data related to its associated factors were collected. SPSS version 26.0 was used to analyze data and report descriptive statistics; chi-square tests were performed to determine statistical significance. **Results:** The prevalence of obesity was 7% (n=15). Among participants, 57% were aged 2-6 years, 59% were male, and 63% resided in rural areas. An insignificant association was found between obesity and age, gender, socioeconomic status, or family history (p>0.050). A higher obesity trend was observed in urban areas (11%) than rural areas (4%), though it was statistically insignificant (p=0.053). Most of the children were physically active (88%), with high obesity (54%) reported in inactive children. **Conclusions:** Childhood obesity was low, with no significant associations found with key demographic or socioeconomic factors. However, urban residence and physical inactivity showed trends toward higher obesity risk.

INTRODUCTION

The growing problem of childhood obesity is becoming a substantial public health concern worldwide. According to the World Health Organization (WHO), there is a fourfold increase in obesity among children and adolescents from 2% in 1990 to 8% in 2022 globally [1]. It is defined by WHO as body mass index (BMI) equal to or higher than the 95th percentile compared to the members of the same sex and age group [1]. Childhood obesity has skyrocketed across the globe in the past few decades, becoming a dangerous threat to both short and long-term healthcare. The spread of this increasing epidemic is caused by a synergy of genetics, poor diet and eating patterns, lack of exercise, and environmental factors [2-4]. Notably, the spread of obesity among children is no longer restricted to developed nations but is on the rise in low- and middle-income countries (LMICs), including Pakistan, where urbanization and lifestyle changes are proliferating this issue [5]. There is a sustained growth of child obesity in Pakistan, as it has been noted all over the world. This alarming increase is due to urbanization and transition to poor nutrition habits, which in turn have been attributed to less physical activity [6]. Research demonstrates that urban children, especially those in capital cities such as Islamabad, are more vulnerable since the processed food that is high in energy, as well as soft drinks, are readily available, and the chances of engaging in physical exercise outside are low. Moreover,

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a socio-economic context, such as income level and the level of parental education, significantly affects dietary and life habits, contributing to the aggravation of the situation even further [7, 8]. Obesity has led to the elevated risk of developing non-communicable diseases that encompass hypertension, type 2 diabetes mellitus, and cardiac problems that are costing the medical system significant sums [9]. The risk window is mostly among youngsters during childhood (2-11 years old) can develop habits, and their influence on the lifelong state of health. The risks of having problems of mental health, including childhood obesity, leading to the lack of confidence, depression, and anxiety among obese children, are other threats to childhood obesity and the increased likelihood of obesity developing in adulthood [7, 9]. Primary prevention of obesity at this early age is therefore important to curtail the long-term burden of diseases caused by obesity. In Pakistan, although several studies have focused on exploring the trend of obesity among school-going children, there is insufficient evidence available about obesity prevalence among children in the age range of 2-11 years [10, 11]. Since tertiary hospitals are referral hospitals covering a wide array of populations, it is a distinct asset to examine the prevalence rate of obesity among all ages. The children served in these hospitals represent different socio-economic groups and are thus optimal environments because of their low financial capabilities to seek alternative healthcare providers. Regional trends and risk factors associated with obesity are thus easily identified in such clinical settings. It is still unclear to what extent childhood obesity exists or what predisposing factors play a role in childhood obesity in Islamabad. This disparity brings to light a necessity to conduct more wide-scaled studies that capture not only the prevalence of obesity but also extend to underlying factors like dietary habits, physical exercise, parental enlightenment, and economic background [12]. Addressing these factors is essential for designing more focused public health initiatives to combat the rising prevalence of childhood obesity. By analyzing hospital-based data, this study seeks to provide an expanding body of literature on childhood obesity in Pakistan.

Childhood obesity is an emerging public health concern in Pakistan, yet reliable data for younger children, particularly those aged 2–11 years, remain limited. Most local studies focus on school-aged adolescents, with insufficient attention to early childhood and hospital-based populations. Furthermore, the interplay between demographic, socioeconomic, and lifestyle factors in this age group has not been adequately explored in the Islamabad region. This lack of context-specific evidence highlights the need to determine the prevalence and associated factors of obesity in young children attending tertiary care facilities. This study aimed to find out the frequency of obesity in children between the age group of 2-11 years presenting at a tertiary care hospital in Islamabad.

METHODS

A descriptive cross-sectional study was done in the Pediatric Department, Avicenna Medical Complex (AMC), Islamabad, to find out the prevalence rate of obesity in children aged between 2-11 years. The validity period of the study lasted six months, starting May 10, 2024, to November 10, 2024. The sample size was computed using the WHO sample size calculator, where the confidence level was set as 95%, the estimated prevalence of obesity was assumed to be approximately 7.5% and a margin of error of 5% was considered [13]. 220 children were involved at different ages, both male and female. Non-probability consecutive sampling was implemented. The inclusion criteria included both male and female children aged 2 to 11 years who either presented to the tertiary care hospital in Islamabad or were admitted to the same. The study only involved children whose parents or legal guardians gave informed consent. As well, the participants had to be clinically stable during the assessment period, and detailed and valid anthropometric data, like height, weight, and age, could be collected. But children with congenital syndromes and chronic systemic illnesses or endocrine disorders that may affect their growth and weight, such as hypothyroidism or Cushing syndrome, were excluded. Moreover, the children using long-term drugs that have a known impact on body weight, including corticosteroids or antiepileptic drugs, and those with incomplete or inadequate anthropometric or clinical measures were excluded from the research. These criteria were adopted to retain the integrity and interest of the study population to provide a more accurate measure concerning the occurrence of obesity and its causal issues. The study was approved by the hospital's ethical committee under letter no Ref ERC: KRL-HI-PUB-ERC/Mar24/6 to rule out any ethical concerns, before the commencement of data collection. Written informed consent was obtained from the parents or guardians of all participating children. Participants who were eligible for the study were enrolled from the Pediatric Outpatient Department (OPD) and the Pediatric Ward of Avicenna Medical Complex (AMC). A trained researcher measured each child's height using a stadiometer, whereas weight was measured on a digitally calibrated scale. Both measurements were performed using WHO standardized protocols [14]. Body Mass Index (BMI) was calculated by dividing the weight in kilograms by the square of the height in meters (kg/m^2), which was then plotted on the WHO age- and sex-specific BMI percentile charts to measure the obesity in the children. Children

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whose BMI was greater than the 2nd standard deviation (+2SD) percentile were classified as obese. Information related to the variables such as age, gender, weight, height, BMI, place of residence, socioeconomic background, levels of physical activity, screen time, and any family history of obesity was collected using a structured questionnaire. Physical activity was characterized as participating in a moderate exercise activity of around 30 minutes daily or an activity that exceeds two hours during a course of one week. Children who have screen time exposure of more than two hours per day were classified as having high screen time, which is associated with an elevated risk of obesity [15]. To make the data collection process accurate and consistent, the supervisor was an expert consultant, having a minimum of five years of experience in treating pediatric patients. Strict exclusion criteria were taken into consideration so that the study outcome would be less prone to biases. The possible confounders in our study were age, gender, socioeconomic background, family history of obesity, and place of residence, and they were stratified either during data collection or the data analysis stage in an attempt to limit bias. The data were analyzed using the Statistical Package of Social Sciences (SPSS) version 26.0. In the case of continuous variables, age, weight, height, and BMI, mean and standard deviation have been calculated as descriptive statistics. Frequency distribution and percentage were used to reveal categorical variables, such as gender, residence, socioeconomic status, level of physical activity, family history of obesity, and status of obesity. Before arriving at any potential relationships, the Chi-square test was used to determine the relationships, whereby a p-value≤0.05 was used as a significant relationship.

RESULTS

The study comprised 220 children, of which 125 (57%) were aged between 2-6 years and 95 (43%) were aged 7-11 years. The mean age was 7 ± 3.81 years. Out of all the participants, males were 130 (59%), whereas female were 90 (41%). In terms of residence, 139 (63%) children were from rural areas, while 81 (37%) were from urban areas. With regards to the socioeconomic status, 108 (49%) children were from poor families, 90 (41%) were middle class, and 22 (10%) were classified as rich. A majority of 194 (88%) children were physically active, while 26 (12%) were not. A family history of obesity was reported in 46 (21%) children. Obesity was observed in 15 (7%) children, while 205 (93%) were not obese. The association between obesity and related factors, including gender, age, residence, socioeconomic background, physical activity, and family history, are summarized in table 1.

Table 1: Demographic Characteristics of Participants (n=220)

Characteristics	n (%)
Age	
2-6 Years	125 (57%)
7-11 Years	95 (43%)
Gender	
Male	130 (59%)
Female	90 (41%)
Residence	
Rural	139 (63%)
Urban	81 (37%)
Socioeconomic Background	
Poor	108 (49%)
Middle Class	90 (41%)
Rich	22 (10%)
Family History of Obesity	
Yes	46 (21%)
No	174 (79%)
Obesity	
Yes	15 (7%)
No	205 (93%)
Physical Activity	
Positive	194 (88%)
Negative	26 (12%)

Our study results indicate that obesity among children between the age group of 2-11 years in the study sample was low, with 7% of children classified as obese. There were no significant associations between obesity and numerous factors such as gender, age, socioeconomic background, or genetic tendency for obesity. However, the results suggest a higher prevalence of obesity in the urban areas as compared to the rural areas, although the difference turned out to be statistically insignificant (p>0.053). Additionally, children who were not physically active were more likely to be obese, though this finding also did not reach the significance level (p>0.050), as mentioned in table 2.

Table 2: Stratification of Obesity by Key Factors Using Chi-Square Test (n=220)

Factor	Obesity (Yes)	Obesity (No)	Total	2p-value (95% CI)
Age				
2-6 years	8 (6%)	117 (94%)	125	–
7-11 years	7 (7%)	88 (93%)	95	
Gender				
Male	10 (8%)	120 (92%)	130	–
Female	5 (6%)	85 (94%)	90	
Residence				
Rural	6 (4%)	133 (96%)	139	>0.053 (0.94–7.70)
Urban	9 (11%)	72 (89%)	81	
Physical Activity				
Positive	1 (1%)	193 (99%)	194	>0.050 (0.49–1.52)
Negative	14 (54%)	12 (46%)	26	

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Genetic Tendency				
Yes	5 (11%)	41 (89%)	46	>0.050 (1.87–19.86)
No	10 (6%)	164 (94%)	174	

DISCUSSION

The current study aimed to determine the frequency of obesity among children in the age group of 2-11 years. The findings indicate that obesity prevalence in this population was relatively low, with only 7% of the children being classified as obese. The lower obesity rates were consistent with the other parts of the world, but still concerning, given the growing global burden of childhood obesity [1]. While the overall prevalence of obesity in the study sample was low, we found no significant associations between obesity and key demographic factors such as age, gender, socioeconomic background, or family history of obesity. Previous studies have demonstrated that socioeconomic background can impact the prevalence of childhood obesity, with children from lower socioeconomic backgrounds often exhibiting higher obesity rates due to factors such as unhealthy eating habits, inadequate access to healthy food, and reduced physical activity [16, 17]. In contrast, our findings suggest that socioeconomic status did not significantly correlate with obesity in this study, which may reflect the homogeneous distribution of socioeconomic status among the participants. The study population consisted of children from low- to middle-income families, with 49% classified as poor and 41% as middle class, which may limit the generalizability of the results to higher-income populations. In terms of physical activity, 88% of the children in our study were reported to be physically active. However, despite the considerable proportion of physically active children, obesity was still observed in 7% of the sample. This is consistent with other studies that indicate that while physical activity is necessary for sustaining a healthy weight, it alone may not be sufficient to prevent obesity [16, 18]. Factors such as dietary habits, screen time, and genetic predispositions also play a significant role in the development of obesity, but these factors were not thoroughly explored in the current study. For instance, studies found that sedentary behaviors like excessive screen time are strongly associated with obesity in children, suggesting the importance of addressing lifestyle factors in comprehensive obesity prevention strategies [19, 20]. The association between obesity and residence (rural vs. urban) showed a different pattern, with an elevated prevalence of obesity in the urban areas (11%) compared to the rural areas (4%). Although this difference did not reach statistical significance (p=0.0538), it is compatible with the expanding body of evidence that indicates urbanization contributes to an increased risk of childhood obesity. Urban children may have access to a greater variety of high-calorie foods, increased sedentary behaviors (such as excessive screen time), and limited access to physical activity spaces [21]. This is especially concerning in developing countries like Pakistan, where urbanization is rapidly increasing, leading to a shift in dietary patterns and lifestyle behaviors that promote obesity. Interestingly, the study did not find any statistically significant relationship between genetic predisposition and obesity. While family history is known to be an important determinant of obesity risk [22], it is worth pointing out that it is not the only determining factor of obesity that is controlled by genes. The environmental conditions, like food habits, physical exercises, and economic status, are key factors that predispose a child to obesity [17, 23]. Lack of a notable association in the current study could also be attributed to the low percentage of children that had a genetic predisposition (21%) or it could be because the sample in question is small.

This study was limited by its single-center, hospital-based design and use of non-probability consecutive sampling, which may restrict generalizability to the wider community. The relatively small number of obese cases reduced the statistical power to detect significant associations. Additionally, dietary patterns and detailed sedentary behaviors were not comprehensively assessed. Future multicenter, community-based studies with larger sample sizes and inclusion of detailed nutritional, behavioral, and longitudinal data are recommended to better understand risk determinants and guide targeted prevention strategies.

CONCLUSIONS

The study concluded that the prevalence of obesity among children in this study was comparatively low. The results emphasize the need to address key risk factors for childhood obesity, such as physical activity, dietary habits, and sedentary behaviors. Interventions targeting lifestyle changes, predominantly in urban settings, may be beneficial for preventing the rise of obesity in future generations. Moreover, continued surveillance of childhood obesity trends is necessary for mounting some efficient public health strategies.

Authors' Contribution

Conceptualization: A
Methodology: A, AV, RV, MK
Formal analysis: A, AV, RV, MK, BZ
Writing and Drafting: AV, RV, MAB, MK, BZ
Review and Editing: AV, RV, MAB, MK, BZ, A

All authors approved the final manuscript and take responsibility for the integrity of the work

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Conflicts of Interest

All the authors declare no conflict of interest.

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REFERENCES

[1] Murray CJ, Aravkin AY, Zheng P, Abbafati C, Abbas KM, Abbasi-Kangevari M *et al.* Global Burden of 87 Risk Factors in 204 Countries and Territories, 1990–2019: A Systematic Analysis for the Global Burden of Disease Study 2019.The Lancet.20200ct;396 (10258) : 1223-49.

[2] Abarca-Gómez L, Abdeen ZA, Hamid ZA, Abu-Rmeileh NM, Acosta-Cazares B, Acuin C *et al.* Worldwide Trends in Body-Mass Index, Underweight, Overweight, and Obesity from 1975 to 2016: A Pooled Analysis of 2416 Population-Based Measurement Studies in 128. 9 Million Children, Adolescents, and Adults. The Lancet. 2017 Dec; 390(10113): 2627-42.

[3] Popkin BM and Ng SW. The Nutrition Transition to A Stage of High Obesity and Non-Communicable Disease Prevalence Dominated by Ultra-Processed Foods Is Not Inevitable. Obesity Reviews.2022Jan; 23(1): e13366. doi: 10.1111/obr.13366.

[4] Lobstein T, Jackson-Leach R, Moodie ML, Hall KD, Gortmaker SL, Swinburn BA *et al.* Child and Adolescent Obesity: Part of A Bigger Picture.The Lancet.2015Jun;385(9986):2510-20.doi:10.1016/S0 140-6736(14)61746-3.

[5] Roth CL and Jain V. Rising Obesity in Children: A Serious Public Health Concern. The Indian Journal of Pediatrics.2018Jun;85(6):461-2.doi: 10.1007/s1 2098-018-2639-7.

[6] Kumar S and Kelly AS. Review of Childhood Obesity: From Epidemiology, Etiology, and Comorbidities to Clinical Assessment and Treatment. In Mayo Clinic Proceedings.2017Feb;92(2):251-265.doi:10.1016/j. mayocp.2016.09.017.

[7] Tanveer M, Hohmann A, Roy N, Zeba A, Tanveer U, Siener M. The Current Prevalence of Underweight, Overweight, and Obesity Associated with Demographic Factors Among Pakistan School-Aged Children and Adolescents—An Empirical Cross-Sectional Study. International Journal of Environmental Research and Public Health. 2022 Sep 15;19(18):11619. doi: 10.3390/ijerph191811619.

[8] Ekanayake HD, Salibi G, Tzenios N. Analysis of Association Between Childhood Overweight/Obesity with Screen Time, Sedentary Life Style and Low Levels of Physical Activity. Special Journal of the Medical Academy and other Life Sciences.2023Jul; 1(6). doi: 10.58676/sjmas.v1i6.40.

[9] Fang K, Mu M, Liu K, He Y. Screen Time and Childhood Overweight/Obesity: A Systematic Review and Meta-Analysis. Child: Care, Health and Development. 2019 Sep; 45(5): 744-53. doi: 10.1111/cch.12701.

[10] Akbar Z, Naeem S, Javed S, Akhtar Z, Ashfaq Z, Ismail WU *et al.* Risk Factors of Overweight and Obesity in Childhood and Adolescence in Pakistan, A Systematic Review. Discover Public Health.2025 Mar; 22(1): 75. doi: 10.1186/s12982-025-00465-1.

[11] Jadhav OP and Choure V. Understanding and Addressing Childhood Obesity: A Comprehensive Review. International Journal of Academic Medicine and Pharmacy. 2024; 6(3): 558-64.

[12] Tanveer M, Cai Y, Badicu G, Asghar E, Batrakoulis A, Ardigò LP, Brand S. Associations of 24-h movement behaviour with overweight and obesity among school-aged children and adolescents in Pakistan: An empirical cross-sectional study.Pediatric Obesity. 2025 May; 20(5): e13208. doi: 10.1111/ijpo.13208.

[13] Asoba GN, Ebong FS, Metuge S, Tabe EK, Ning TR, Ngole SI. The Effects of Different Feeding Practices on the Nutritional Status of Infants below 12 Months Old in the Kumba 1 Sub-Division. Food and Nutrition Sciences.2024May;15(5):336-50.doi:10.4236/fns .2024.155022.

[14] Borghi E and Sachdev HS. Should A Single Growth Standard Be Used to Judge the Nutritional Status of Children Under Age 5 Years Globally: Yes. The American Journal of Clinical Nutrition.2024Oct; 120(4): 764-8. doi: 10.1016/j.ajcnut.2024.04.019.

[15] Sahoo K, Sahoo B, Choudhury AK, Sofi NY, Kumar R, Bhadoria AS. Childhood Obesity: Causes and Consequences. Journal of Family Medicine and Primary Care.2015 Apr;4(2):187-92.doi:10.4103/22 49-4863.154628.

[16] Wang T, Akram S, Hassan MU, Khurram F, Shahzad MF. The Role of Child Development and Socioeconomic Factors in Child Obesity in Pakistan.Acta Psychologica.2025May;255:104966.doi:10.1016/j. actpsy.2025.104966.

[17] Janssen I and LeBlanc AG. Systematic Review of the Health Benefits of Physical Activity and Fitness in School-Aged Children and Youth. International Journal of Behavioral Nutrition and Physical Activity. 2010 May; 7(1): 40. doi: 10.1186/1479-5868-7-40.

[18] Bakour C, Mansuri F, Johns-Rejano C, Crozier M, Wilson R, Sappenfield W. Association Between Screen Time and Obesity in US Adolescents: A Cross-Sectional Analysis Using National Survey of Children's Health 2016–2017. PLOS One.2022Dec;17(12): e0278490. doi: 10.1371/journal.pone.0278490.

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DOI: https://doi.org/10.54393/pjhs.v6i7.3112

[19] Haghjoo P, Siri G, Soleimani E, Farhangi MA, Alesaeidi S. Screen Time Increases Overweight and Obesity Risk among Adolescents: A Systematic Review and Dose-Response Meta-Analysis. BioMed Central Primary Care.2022 Jun; 23(1): 161. doi: 10.1186/s12875-022-01761-4.

[20] Ramírez-Coronel AA, Abdu WJ, Alshahrani SH, Treve M, Jalil AT, Alkhayyat AS *et al.* Retracted Article: Childhood Obesity Risk Increases with Increased Screen Time: A Systematic Review and Dose-Response Meta-Analysis. Journal of Health, Population and Nutrition.2023Jan;42(1):5.doi: 10.1186/s41043-022-00344-4.

[21] Rai VR. Confronting the Obesity Epidemic in Pakistani Children-Management, Causes, and the Role of Monogenic Factors. Journal of the College of Physicians and Surgeons—Pakistan. 2024 Dec; 34(12): 1549-50. doi: 10.29271/jcpsp.2024.12.1549.

[22] Tanveer M, Asghar E, Badicu G, Roy N, Siener M, Tanveer U *et al.* Association of Physical Activity and Physical Education with Overweight and Obesity among School-Aged Children and Adolescents in Pakistan: An Empirical Cross-Sectional Study. Advances in Public Health.2024;2024(1):5095049. doi: 10.1155/2024/5095049.

[23] Hudaib M, Hussain L, Nazim L, Mohi Uddin S, Jamil MU, Bham SQ *et al.* Understanding Childhood Obesity in Pakistan: Exploring the Knowledge, Attitudes, Practices of Mothers, and Influential Factors. A Cross-Sectional Study.Frontiers in Public Health. 2024Nov;12:1475455.doi:10.3389/fpubh.2024.1475455.

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