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Prevalence of overweight and obesity among Saudi children

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Abstract
Background: Childhood obesity is a global public health concern with major consequences. In Saudi Arabia, the percentage of children who are overweight or obese has significantly increased in the past two decades raising concerns about the physical and psychosocial consequences of this burden.
Objective: The purpose of the study was to determine the prevalence of overweight and obesity among Saudi children in Riyadh, Saudi Arabia.
Methods: This was a cross-sectional study conducted over six months. The study sample included 1000 children of Saudi nationality aged 2–14 years. Body weight and height of these children were measured, and BMI was calculated. The children were classified into four weight categories: underweight (BMI less than the 5th percentile for age and sex), normal weight (BMI between the 5th and 84th percentiles), overweight (BMI between the 85th and 95th percentiles), and obese (BMI more than the 95th percentile). The weight categories were then studied according to sex and age (2–4 years, 5–9 years, and 10–14 years).
Results: In boys and girls, the prevalence of overweight were 11.11% and 15.2% and those of obesity were 13.5% and 24.3%, respectively. The overall prevalence of overweight and obesity were higher among girls than boys. Additionally, the prevalence of overweight and obesity were the highest in the 10–14-year group.
Conclusion: Overweight and obesity are important public health problems among Saudi children. A national prevention program is recommended to avoid obesity-related morbidity in adulthood.

Keywords: Body mass index, childhood obesity, obesity trends, overweight, prevalence, Saudi Arabia

Introduction

The prevalence of childhood obesity has increased considerably across developed and developing countries in recent years [1]. This has prompted the World Health Organization (WHO) to designate obesity as one of the most important public health threats [2, 3]. Indeed, childhood obesity is well recognized to be associated with comorbidities [4, 5, 6]. Metabolic complications associated with obesity during childhood increase the risk of type 2 diabetes and early cardiovascular disease [7]. Furthermore, obesity in children correlates significantly with an increased risk of severe obesity in adulthood [8]. Obesity may also affect psychological health because obese children are more likely to have low self-esteem relative to their non-obese peers [9]. Nutrition choices are associated with lifestyle-related noncommunicable diseases. This was first observed in developed countries and has rapidly spread to many developing countries including Saudi Arabia [10, 11, 12]. In fact, over the past three decades, Saudi Arabia has undergone an enormous lifestyle-related transformation, which markedly contributed to increases in the prevalence of obesity among Saudi children [10]. Surveys in various areas and provinces in Saudi Arabia have reported a high prevalence of overweight and obesity among Saudi children [13, 14, 15]. Accordingly, surveillance of the prevalence of overweight and obesity starting at an early age is important for their management and prevention. This study aimed to assess the prevalence of overweight and obesity among Saudi children who visited the National Guard Comprehensive Clinic in Riyadh, Saudi Arabia.

Methods

1. Study Design

This was a cross-sectional study conducted at the National Guard Comprehensive Specialized Clinic in Riyadh, Saudi Arabia. Data were collected over a period of six months between April and October 2025.

2. Subjects

The study sample included 1000 children of Saudi nationality aged 2–14 years who visited the National Guard Comprehensive Specialized Clinic. These children visited the clinic for the treatment of different diseases and disorders or for vaccination. The study only considered Saudi children at the first visit. Those who visited the clinic for follow-up were excluded. Children from all socioeconomic classes and both sexes were included. Children below two years of age were excluded. Additionally, children above 14 years of age were excluded because these children do not visit pediatric clinics for cultural and social reasons. The study was approved by the institutional review board; it was performed in accordance with the Declaration of Helsinki. Informed consent was obtained from the parents/guardians of the children prior to the participants' inclusion in the study.

3. Data Collection

Trained nursing staff collected anthropometric measurements of weight and height. These nurses were well trained prior to data collection with special emphasis on standardizing the methods of measurement. Height was measured without shoes to the nearest 0.5 cm, and weight was measured with the subject in light clothes and without

shoes to the nearest 100 g. The weighing scale was a lever-type Health O-Meter scale accurate to the nearest 100 g. The scale was placed on a hard, level, uncarpeted floor, and a single scale was used to weigh all the children. The scale was calibrated daily, and it was set to zero before weighing each child. A data collection form was designed to gather data on age, sex, body weight, and height. Body mass index (BMI) was calculated for each child according to the formula adopted internationally: BMI = weight (kg)/height $(m)^2$. The World Health Organization (WHO) growth charts were used to assess BMI [16], and the children were classified into the following four weight categories: underweight (BMI less than the 5th percentile for age and sex), normal weight (BMI between the 5th and 84th percentiles), overweight (BMI between the 85th and 95th percentiles), and obese (BMI more than the 95th percentile). The weight categories were then studied according to sex and age (2–4 years, 5–9 years, and 10–14 years).

4. Statistical Analysis

Data were analyzed using the chi-square test, Student's t-test, and analysis of variance (ANOVA). All analyses were performed using SPSS software (version 15; IBM Corp., Armonk, NY). A P-value <0.05 was considered statistically significant.

Results

The study included 1000 Saudi children, and the mean age of the children was 5.9 years (standard deviation 2.8). The proportions of boys and girls were 48.6% and 51.4%, respectively (Table 1). The prevalence of obesity was significantly higher than that of overweight in all age groups (Figure 1). The prevalence of overweight and obesity were higher among girls than among boys (overweight: 15.1% versus 11.1%, obesity: 24.3% versus 13.6%; P< 0.05; Table 1). The overall proportions of obese boys and girls were higher than the proportions of overweight boys and girls (P < 0.05). The trend of overweight and obesity increased with age (Figure 2).

Table 1: Distribution of body mass index (BMI) categories by sex and age

Variables	Under weight N %	Normal weight N %	Overweight N %	Obese N %	Total N %	P value
Sex Male female	 70 14.4% 38 7.4%	 296 60.9% 273 53.1%	 54 11.1% 78 15.2%	 66 13.5% 125 24.3 %	 486 48.6% 514 51.4%	P < 0.05
Age 2 – 4 4 – 9 10 - 14	 25 23.1% 52 48.1% 31 28.7%	 130 22.8% 271 47.6% 168 29.5%	 11 8.3% 39 29.5% 82 62.1%	 18 9.4% 51 26.7% 122 63.9%	 184 18.4% 413 41.3% 403 40.3%	P < 0.05
Total	108 10.8%	569 56.9%	132 13.2%	191 19.1%	1000 100%	

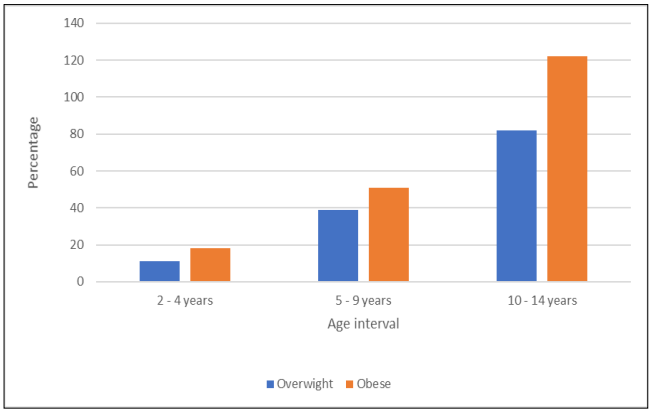

Fig 1: Prevalence of overweight and obesity among children by age

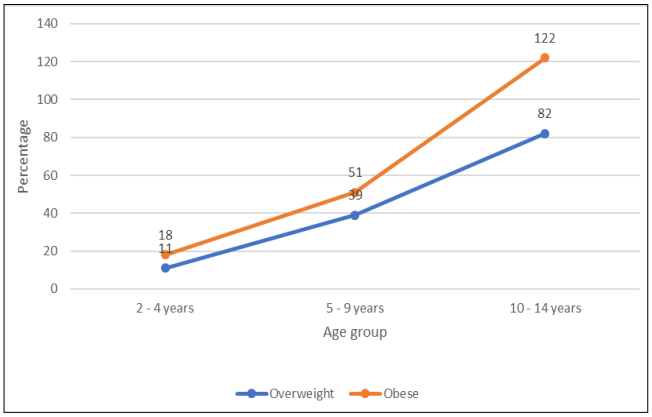

Fig 2: Trend of overweight and obesity according to age

Discussion

We found that the prevalence of overweight was 11.11% and 15.2% in boys and girls, respectively. Obesity rates were 13.5% and 24.3%, respectively. The overall prevalence of overweight and obesity were higher among girls than among boys. Additionally, the prevalence of overweight and obesity were the highest in the 10- to 14-year-old group. Obesity is one of the main health care concerns worldwide. In 2001, the WHO stated that 10% of the world's children were obese and that the prevalence of obesity was rising in developing countries with 155 million children of school age being overweight and 22 million under five years of age being overweight [3]. According to the 2002 WHO statistics, there has been a broad shift in disease burden with most deaths worldwide now related to non-communicable diseases—many of which can be linked to imbalances in nutrition, diet, and physical activity [17].

Many studies have been performed to evaluate the prevalence of overweight and obesity among Saudi children. The latest national data revealed that the prevalence of overweight and obesity among school-age children reached 23% and 9.3%, respectively, while the prevalence of overweight and obesity among preschool children was approximately 15% and 6%, respectively [18]. The prevalence of overweight and obesity were higher in the present study than in the national data. Both regional and national studies have shown an increasing trend in obesity rates over time [19]. Our study found that the weight continued to increase with age. This increase may be attributed to the fact that children start going to school at that age and, hence, there is less control over their eating habits and nutrition. Moreover, children in Saudi Arabia

have become less active. Few children walk to school, and most spend a lot of time on sedentary entertainment activities such as watching television, using computers, and playing video games. On average, a child in Saudi Arabia spends six hours a day in front of screens [20].

The results of this study are similar to previously published studies, which showed a low prevalence of obesity in both sexes among preschool children and the highest prevalence of obesity in both sexes among adolescents [13, 18, 21]. We found that the peak prevalence of obesity was at 10 to 14 years of age (63.9%), while the lowest was at 2 to 4 years of age (9.4%). A similar study has shown that 80% of obese adolescents continue to remain obese in adulthood [22]. Adolescence has been described as the "critical period for the development of adult obesity." Hence, intervention before this stage is vital for both future health and the ability to sustain long-term weight control. We found that the prevalence of overweight and obesity were higher in girls than in boys, and this may be explained by social and cultural factors. Environment, lifestyle, and lack of physical activity are important contributing factors for obesity. The prevention of obesity in children should start from birth with more emphasis placed on exclusive breastfeeding for the first six months of life. The establishment of preschool, school, and adolescent health programs—with an emphasis on increasing the number of hours of physical education and the consumption of healthy food as well as incorporating health messages into the school curricula—will help reduce obesity [23].

Conclusion

The high prevalence of overweight and obesity among Saudi children noted here are a major public health concern and should make a strong case for greater efforts to be directed at the prevention and treatment of childhood obesity in Saudi Arabia. If strong measures are not taken to reduce the prevalence of obesity among Saudi children and youth, we may likely experience a fair reduction in the absolute life expectancy of Saudi adults in the future. To combat childhood obesity in this part of the world, fundamental changes in public policies, food habits, and health systems are required. The primary prevention of obesity through the promotion of a healthy diet and an active lifestyle should be the priority for national public health policy. Furthermore, a national prevention program is recommended to avoid obesity-related morbidity in adulthood.

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References

1. Lobstein T, Baur L, Uauy R, IASO International Obesity TaskForce. Obesity in children and young people: a crisis in public health. Obesity Review,2004:5(S4):4–104.
2. World Health Organization. Obesity: preventing and managing the global epidemic: report of WHO consultation. World Health Organization, 2000.
3. World Health Organization. Global strategy on diet, physical activity and health. World Health Organization, 2021.
4. Barlow SE, Expert Committee. Expert committee recommendations regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity: summary report. Pediatrics,2007:120(4):164–192.
5. Must A, Anderson SE. Effects of obesity on morbidity in children and adolescents. Nutrition in Clinical Care,2003:6:4–12.
6. Reilly JJ, Methven E, McDowell ZC, Hacking B, Alexander D, Stewart L, *et al*. Health consequences of obesity. Archives of Disease in Childhood,2003:88:748–752.
7. Nathan BM, Moran A. Metabolic complications of obesity in childhood and adolescence: more than just diabetes. Current Opinion in Endocrinology Diabetes and Obesity,2008:15:21–29.
8. Suchindran C, North KE, Popkin BM, Gordon-Larsen P. Association of adolescent obesity with risk of severe obesity in childhood. Journal of the American Medical Association,2010:304:2042–2047.
9. Wang F, Wild TC, Kipp W, Kuhle S, Veugelers PJ. The influence of childhood obesity on the development of self-esteem. Health Report,2009:20:21–27.
10. Al-Hazzaa HM. Physical activity, fitness and fatness among Saudi children and adolescents: implications for cardiovascular health. Saudi Medical Journal,2002:23:144–150.
11. Ng SW, Zaghloul S, Ali HI, Harrison G, Popkin BM. The prevalence and trends of overweight, obesity and nutrition-related noncommunicable diseases in the Arabian Gulf States. Obesity Review,2011:12:1–13.
12. Popkin BM. Global nutrition dynamics: the work is shifting rapidly toward a diet linked with noncommunicable diseases. American Journal of Clinical Nutrition,2006:84:289–298.
13. Aljaadi AM, Alharbi M. Overweight and obesity among Saudi children: prevalence, lifestyle factors, and health impact. In: Laher I, editor. Handbook of Healthcare in the Arab World. Springer, 2020.
14. El-Hazmi MA, Warsy AS. A comparative study of prevalence of overweight and obesity in children in different provinces of Saudi Arabia. Journal of Tropical Pediatrics,2002:48:172–177.
15. Al-Dossary SS, Sarkis PE, Hassan A, Ezz El Regal M, Fouda AE. Obesity in Saudi children: a dangerous reality. Eastern Mediterranean Health Journal,2010:16:1003–1008.
16. Kuczmarski RJ, Ogden CL, Guo SS, Grummer-Strawn LM, Flegal KM, Mei Z, *et al*. 2000 CDC growth charts for the United States: methods and development. Vital Health Statistics,2002:11(246):1–190.
17. Barlow SE, Dietz WH. Obesity evaluation and treatment: expert committee recommendations. The Maternal and Child Health Bureau Health Resources and Services Administration and the Department of Health and Human Services. Pediatrics,1998:102:29.
18. El-Mouzan MI, Al-Herbish AS, Al-Salloum AA, Qurachi MM, Al-Omar AA. Growth charts for Saudi children and adolescents. Saudi Medical Journal,2007:28:1555–1568.

19. Al Shehri A, Al Fattani A, Al Alwan I. Obesity among Saudi children. Saudi Journal of Obesity,2013:1:3–9.
20. Baker S, Barlow S, Cochran W, Fuchs G, Klish W, Krebs N, *et al*. Overweight children and adolescents: a clinical report of the North American Society for Pediatric Gastroenterology Hepatology and Nutrition. Journal of Pediatric Gastroenterology and Nutrition,2005:40:533–543.
21. Al-Nuaim AR, Bamgboye EA, Al-Herbish A. The pattern of growth and obesity in Saudi Arabian male school children. International Journal of Obesity and Related Metabolic Disorders,1996:20:1000–1005.
22. Daniels SR, Arnett DK, Eckel RH, Gidding SS, Hayman LL, Kumanyika S, *et al*. Overweight in children and adolescents: pathophysiology consequences prevention and treatment. Circulation,2005:111:1999–2012.
23. Al-Nozha MM, Al-Mazrou YY, Al-Maatouq MA, Arafah MR, Khalil MZ, Khan NB, *et al*. Obesity in Saudi Arabia. Saudi Medical Journal,2005:26:824–829.