EPH225

The Shifting Patterns of Childhood Obesity: Insights from National School Screening Data

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INTRODUCTION

Recent population-based and school-based studies indicated that the prevalence of overweight and obesity in children and adolescents in Saudi Arabia ranges between 11% to 14.4% and 7.1% to 9.4%, respectively [1, 2, 3] . Recent reports indicated an increasing prevalence of overweight and obesity through the last three decades, making it an impending national epidemic [4]

However, previous studies used different internationally developed Body Mass Index (BMI) referencing tools [5, 6, 7] , and only a few studies used country-specific growth charts [8, 9] , which resulted in inconsistent obesity prevalence data. Data based on standardized and ethnically representative growth charts are essential to guide targeted obesity prevention and management of public health efforts.

OBJECTIVES

This study aims to assess the quality of healthcare data among Ministry of Health facilities in Saudi Arabia. Toward this end, a data quality engine will be built and validated, and a business rules list for data quality will be established.

METHODS

Design and sample: Weight, height, and body mass index (BMI) data from 1 134 317 children in first, fourth, seventh, and tenth school grades who participated in the national school screening program were analyzed cross-sectionally. BMI values were classified using the Growth Charts for Saudi Children and Adolescents[8]. The data collection for the national school screening program was established in September 2018, but the data obtained for this study was limited to January 2020 and April 2022.

Measures: Demographic data for age, gender, school grade, geographical regions, and type of cities were collected. School grade was coded as primary school (grades 1 and 4), intermediate school (grade 7), and secondary school (grade 10). BMI data were plotted on Saudi's sex-specific percentile charts and categorized into four groups: underweight (less than the 5th percentile), normal weight (between the 5th percentile and 85th percentile), overweight (between the 85th and 95th percentile), and obese (more than 95th percentile)[8,11].

Statistical Analysis: Descriptive statistics, Chi-Square, Pearson Product-Moment Correlation (r), and multiple linear regression were used.

RESULT

A total of 1 124 116 Saudi school-age children were included in the analysis after cleaning and deletion of duplicate cases. The mean for age was 11.85 (±3.57). Nearly 10.4% of students were overweight, 10.7 % were obese, and 4.50% were severely obese. Male students had a higher prevalence of overweight, obesity, and severe obesity (2.5% vs. 1.9%) than their female counterparts. Overweight and obesity were the highest among students in intermediate school, the Central region, and administrative capitals and the lowest among students in governorates B and in the southern region. Being in intermediate school grade significantly predicted higher BMI.

REFERENCES

CONTACT INFOMRATION

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TABLE 1: Demographic sample characteristics

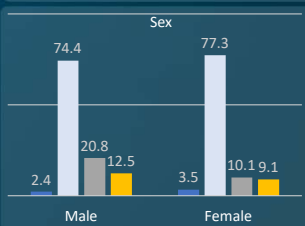| Variable	Frequency (%)
Sex	
Male	534979 (47.6%)
Female	589137 (52.4%)
School Grade	
Primary	510478 (45.4%)
Intermediate	293415 (26.1%)
Secondary	320223 (28.5%)
City Type	
Administrative capital	460616 (41.0%)
Governorate A	413697 (36.8%)
Governorate B	93308 (8.3%)
Rural	156495 (13.9%)
Region	
Central	297505 (26.5%)
East	175707 (15.6%)
North	126699 (11.3%)
South	200255 (17.8%)
West	323950 (28.8%)

Sex

TABLE 2: Mean and standard deviation of body mass index across categories of sex, school grade, city types, regions, and body mass index

Variables	BMI Mean (SD)
Sex	
Male	18.99 (5.03)
Female	18.96 (4.7)
School grade	
Primary	16.27 (3.3)
Intermediate	20.24 (4.4)
Secondary	22.08 (5.05)
City type	
Admin Capitals	19 (4.7)
Governorate A	18.46 (4.6)
Governorate B	18.49 (4.7)
Rural	19.44 (5.08)
Region	
Central	19.82 (5.1)
East	19.15 (5.03)
North	18.7 (4.6)
South	18.6 (4.5)
West	18.4 (4.8)
BMI categories	
Underweight	12.9 (1.5)
Normal weight	17.4 (3.1)
Overweight	23.14 (3.6)
Obese	27.58 (4.8)

School Grade
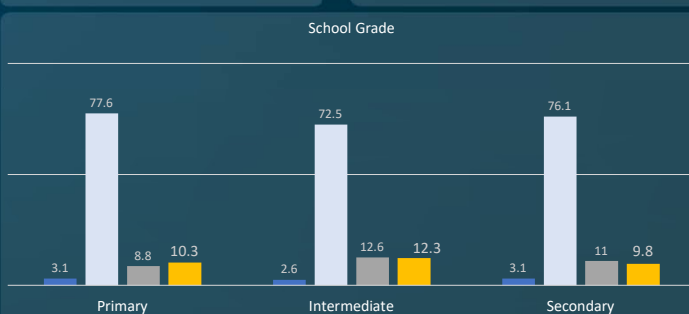
DISCUSSION

Comparing our results with those of other countries, Saudi Arabia remains in an intermediate position for both overweight and obesity[4]. Compared to previous national reports, our findings highlighted an increased prevalence of childhood obesity in Saudi Arabia[1-3, 12, 13]. and a changing pattern as it has increased among males in the 12-15 age groups[16]., and confits regional differences in the prevalence of obesity [1-3, 8, 12, 11].

CONCLUSIONS

Utilizing multi-disciplinary clinical and community-based participatory approaches is essential to develop a nationwide pediatric obesity prevention and management program that is effective and sustainable. This program must utilize dynamic BMI surveillance systems using ethnically representative growth references.