



## ORIGINAL ARTICLE

## Socioeconomic inequality in childhood obesity and its determinants in Iran: a Blinder–Oaxaca decomposition<sup>☆</sup>

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### KEYWORDS

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### Abstract

**Objective:** Childhood obesity has become a priority health concern worldwide. Socioeconomic status (SES) is one of its main determinants. This study aimed to assess the socioeconomic inequality of obesity in children and adolescents at national and provincial levels in Iran.

**Methods:** This multicenter cross-sectional study was conducted in 2011–2012, as part of a national school-based surveillance program performed in 40,000 students, aged 6–18-years, from urban and rural areas of 30 provinces of Iran. Using principle component analysis, the SES of participants was categorized to quintiles. SES inequality in excess weight was estimated by calculating the prevalence of excess weight (*i.e.*, overweight, generalized obesity, and

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abdominal obesity) across the SES quintiles, the concentration index (CCI), and slope index of inequality (SII). The determinants of this inequality were determined by the Oaxaca Blinder decomposition.

**Results:** Overall, 36,529 students completed the study (response rate: 91.32%); 50.79% of whom were boys and 74.23% were urban inhabitants. The mean (SD) age was 12.14 (3.36) years. The prevalence of overweight, generalized obesity, and abdominal obesity was 11.51%, 8.35%, and 17.87%, respectively. The SII for overweight, obesity and abdominal obesity was  $-0.1$ ,  $-0.1$  and  $-0.15$ , respectively. CI for overweight, generalized obesity, and abdominal obesity was positive, which indicate inequality in favor of low SES groups. Area of residence, family history of obesity, and age were the most contributing factors to the inequality of obesity prevalence observed between the highest and lowest SES groups.

**Conclusion:** This study provides considerable information on the high prevalence of excess weight in families with higher SES at national and provincial levels. These findings can be used for international comparisons and for healthcare policies, improving their programming by considering differences at provincial levels.

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## PALAVRAS-CHAVE

Obesidade;  
Desigualdade;  
Crianças;  
Adolescentes;  
Decomposição de  
Oaxaca-Blinder

## Desigualdade socioeconômica na obesidade infantil e seus determinantes no Irã: decomposição de Oaxaca-Blinder

### Resumo

**Objetivo:** A obesidade infantil se tornou uma preocupação de saúde prioritária em todo o mundo. A situação socioeconômica (SSE) é um de seus principais determinantes. Este estudo tem como objetivo avaliar a desigualdade socioeconômica com relação à obesidade entre crianças e adolescentes em nível nacional e subnacional no Irã.

**Métodos:** Este estudo transversal multicêntrico foi conduzido em 2011-2012 como parte de um programa nacional de vigilância escolar realizado com 40000 alunos, com idade entre 6-18 anos, de áreas urbanas e rurais de 30 províncias do Irã. Utilizando a análise de componentes principais, a SSE dos participantes foi categorizada em quintis. A desigualdade da SSE no excesso de peso foi estimada pelo cálculo da prevalência de excesso de peso (ou seja, sobrepeso, obesidade geral e obesidade abdominal) em todos os quintis da SSE, o índice de concentração (C) e o *slope index of inequality* (SII). Os determinantes dessa desigualdade foram determinados pela decomposição de Oaxaca-Blinder.

**Resultados:** No total, 36529 alunos completaram o estudo (taxa de resposta: 91,32%), dos quais 50,79% eram meninos e 74,23%, habitantes urbanos. A idade média (DP) foi 12,14 (3,36) anos. A prevalência de sobrepeso, obesidade geral e obesidade abdominal foi 11,51%, 8,35% e 17,87%, respectivamente. A SSE com relação a sobrepeso, obesidade e obesidade abdominal foi  $-0,1$ ,  $-0,1$  e  $-0,15$ , respectivamente. O índice C com relação a sobrepeso, obesidade geral e obesidade abdominal foi positivo, o que indica que a desigualdade estava em favor de grupos de baixa SSE. A área de residência, o histórico familiar de obesidade e a idade foram os fatores que mais contribuíram para a desigualdade da prevalência de obesidade observados entre os grupos em SSE mais alta e mais baixa.

**Conclusão:** Este estudo fornece informações consideráveis sobre a alta prevalência de excesso de peso em famílias em SSE mais alta em nível nacional e subnacional. Esses achados podem ser utilizados para comparações internacionais e políticas de saúde, melhorando a programação ao considerar as diferenças em nível subnacional.

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## Introduction

In recent years, the increasing prevalence of childhood obesity has become a health concern worldwide.<sup>1</sup> According to a report by the World Health Organization (WHO), obesity is a major risk factor for non-communicable diseases

including cardiovascular diseases, diabetes, and some types of cancer.<sup>2</sup> Obesity, as a complex disorder, can be influenced by several factors. The relationship between socioeconomic status (SES) and obesity in children and adolescents has been well documented; however, conflicting results were observed according to the country's income.<sup>3</sup> Most studies

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