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ORIGINAL ARTICLE

Effect of breastfeeding on obesity of schoolchildren: influence of maternal education



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KEYWORDS

Breastfeeding;
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Abstract

Objective: To evaluate the association between duration of breastfeeding (BF) and obesity in schoolchildren of Florianópolis (SC), and the role of possible effect modifiers.

Methods: Cross-sectional study with a random sample of 2826 schoolchildren (7–14 years). Weight and height were measured according to standardized procedures. Data concerning BF and sociodemographic variables were obtained from a questionnaire sent to parents/guardians. Children's nutritional status was evaluated by BMI-for-age z-score for gender (WHO reference curves). Adjusted analyses were performed through logistic regression, considering a possible interaction among variables.

Results: Prevalence of obesity was 8.6% (95% CI: 7.6–9.7%) and 55.7% (95% CI: 53.8–57.6%) received breastmilk for ≥ 6 months. BF was not associated with obesity, even in the adjusted analysis. Stratified analysis according to maternal schooling showed that, in children aged 7–10 years and children whose mothers had 0–8 years of schooling, the chance of obesity was lower among those breastfed for >1 month, especially among those who received breastmilk for 1–5 months (OR=0.22; 95% CI 0.08–0.62). Among children of women with higher schooling (>8 years), the chance of obesity was 44% lower in those who were breastfed for >12 months (p -value for interaction <0.01). This interaction was not found in older children (11–14 years).

Conclusions: Among children of women with lower schooling, BF for any period longer than 1 month is protective against obesity; however, for a higher maternal schooling, BF for less than 12 months increases the odds of obesity.

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PALAVRAS-CHAVE

Aleitamento materno;
Obesidade;
Escolares

Efeito do aleitamento materno sobre a obesidade em escolares: influência da escolaridade da mãe**Resumo**

Objetivo: Avaliar a associação entre a duração do aleitamento materno (AM) e a obesidade em escolares de Florianópolis (SC), assim como o papel de possíveis modificadores de efeito.

Métodos: Estudo transversal com amostra probabilística de 2.826 escolares de 7–14 anos. Foram aferidos o peso e a altura dos escolares, de acordo com procedimentos padronizados. Dados referentes ao AM e variáveis sociodemográficas foram obtidos por questionário enviado aos pais/responsáveis. O estado nutricional foi avaliado pelo escore-Z IMC/idade (curvas da OMS), de acordo com o sexo. Análises ajustadas foram feitas com regressão logística e foi considerada a possível interação de variáveis.

Resultados: A obesidade afetou 8,6% dos escolares (IC95%: 7,6–9,7%) e o AM por \geq seis meses foi encontrado em 55,7% (IC95%: 53,8%–57,6%). O AM não esteve associado à obesidade, mesmo nas análises ajustadas. As análises estratificadas por escolaridade materna mostraram que, nas crianças de 7–10 anos e filhos de mulheres com até oito anos de estudo, a obesidade foi menor nos que receberam AM por qualquer período >1 mês, em especial entre aqueles que receberam AM por 1–5 meses (RO=0,22; IC95%: 0,08–0,62). Nos filhos de mulheres com maior escolaridade (>8 anos), a chance de obesidade foi 44% menor nos que haviam recebido leite materno por >12 meses (p de interação $<0,01$). Em adolescentes de 11–14 anos não foi verificada essa interação.

Conclusões: O AM por períodos maiores do que um mês em filhos de mulheres com baixa escolaridade protege contra a obesidade, mas quando a escolaridade materna é maior, períodos de AM menores de 12 meses aumentam as chances de obesidade.

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Introduction

Over the past four decades, there has been an increase of at least five fold in the prevalence of obesity among children and adolescents aged 5–19 years of both genders, in Brazil.¹

Obesity is a multifactorial disease associated with several health problems². There are several factors associated with obesity, and breastfeeding (BF) seems to protect against the disease. The evidence that BF can protect against obesity seems to be related to the fact that breastmilk has a different composition and hormonal response compared to other milks, which may also be related to the adaptation to the diet after BF.³ However, the hypothesis of this protective effect remains unclear.^{3–10}

Few studies on this association have been carried out in middle or low-income countries, including Brazil,^{11,12} particularly in the age range of elementary school students. In this context, the aim of the study was to evaluate the association between duration of breastfeeding (BF) and obesity in schoolchildren from Florianópolis, state of Santa Catarina, Brazil, and the role of potential effect modifiers in elementary school students in the same city.

Method

Cross-sectional study with a random sample of schoolchildren aged 7–14 years enrolled in public and private elementary schools in Florianópolis (SC). Sample size

calculation and sample selection have been described in a previously published article.¹³ In brief, it was considered for sample size calculation a prevalence of 10% of obesity in children aged 7–10 years and 17% in adolescents aged 11–14 years, with a margin of error of 2%, design effect of 1.3 and study power of 80%. Considering these data, we estimated the number of 2800 students to be assessed. Moreover, assuming a random loss of 10%, we obtained a total of 3100 schoolchildren to be selected.

The study used a probabilistic sampling design in two phases. In the first phase, local schools were divided into four strata, according to two geographical areas (downtown/continent and beaches) and types of school (public or private). Within each stratum, schools were randomly selected. The sample included 17 schools (11 public and 6 private). In the second phase, in each included school, children were randomly selected.

The study included students aged 7–14 years that had the permission of their parents or guardians to participate, by signing the informed consent form. The study was approved by the Institutional Review Board of Universidade Federal de Santa Catarina/CCS on 24 April 2006 (Opinion 028/06).

The data collection team consisted of 10 trained and standardized examiners. A pilot study was carried out with anthropometric measurements in two schools of Florianópolis that were not included in the study sample.¹⁴

Anthropometric measurements were performed according to the protocol defined by the World Health Organization

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