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ORIGINAL ARTICLE

Analysis of factors associated with excess weight in school children

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KEYWORDS

Obesity;
Overweight;
Dietary habits;
Health behavior;
School children

Abstract

Objective: To determine the prevalence of overweight and obesity in schoolchildren aged 10–16 years and its association with dietary and behavioral factors.

Methods: Cross-sectional study that evaluated 505 adolescents using a structured questionnaire and anthropometric data. The data was analyzed through the T Test for independent samples and Mann–Whitney Test to compare means and medians, respectively, and Chi² Test for proportions. Prevalence ratio (RP) and the 95% confidence interval was used to estimate the degree of association between variables. The logistic regression was employed to adjust the estimates to confounding factors. The significance level of 5% was considered for all analysis.

Results: Excess weight was observed in 30.9% of the schoolchildren: 18.2% of overweight and 12.7% of obesity. There was no association between weight alterations and dietary/behavioral habits in the bivariate and multivariate analyses. However, associations were observed in relation to gender. Daily consumption of sweets [PR=0.75 (0.64–0.88)] and soft drinks [PR=0.82 (0.70–0.97)] was less frequent among boys; having lunch daily was slightly more often reported by boys [OR=1.11 (1.02–1.22)]. Physical activity practice of (≥ 3 times/week) was more often mentioned by boys and the association measures disclosed two-fold more physical activity in this group [PR=2.04 (1.56–2.67)] when compared to girls. Approximately 30% of boys and 40% of girls stated they did not perform activities requiring energy expenditure during free periods, with boys being 32% less idle than girls [PR=0.68 (0.60–0.76)].

Conclusions: A high prevalence of both overweight and obesity was observed, as well as unhealthy habits in the study population, regardless of the presence of weight alterations. Health promotion strategies in schools should be encouraged, in order to promote healthy habits and behaviors among all students.

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PALAVRAS-CHAVE

Obesidade;
Sobrepeso;
Hábitos alimentares;
Comportamento de
saúde;
Escolares

Análise dos fatores associados ao excesso de peso em escolares

Resumo

Objetivo: Determinar a prevalência de sobrepeso e obesidade em escolares entre 10 e 16 anos e sua associação com fatores alimentares e comportamentais.

Métodos: Este é um estudo transversal, que avaliou 505 escolares através de questionário estruturado e dados de antropometria. Para a análise dos dados foram utilizados o Teste T para amostras independentes e o Teste de Mann-Whitney para comparação de médias e medianas, respectivamente, e o Teste do χ^2 para proporções. A Razão de Prevalência (RP) e seus respectivos intervalos de confiança a 95% foi empregado como estimador de associação e regressão logística múltipla para ajustamento por fatores de confusão. Em todas as análises, considerou-se um nível de significância de 5%.

Resultados: Observou-se excesso de peso em 30,9% dos escolares: 18,2% de sobrepeso e 12,7% de obesidade. Não se observou associação entre as alterações de peso e hábitos alimentares/comportamentais nas análises bivariadas e multivariadas. Entretanto, foram encontradas associações quanto ao sexo. Consumir doces [RP=0,75 (0,64-0,88)] e refrigerantes diariamente [RP=0,82 (0,70-0,97)] foram hábitos relatados por 273 (54,1%) crianças, menos frequentemente pelos meninos. Almoçar diariamente foi hábito discretamente mais observado entre os meninos [RP 1,11 (1,02;1,22)]. Praticar atividade física (≥ 3 vezes/semana) foi mais referido pelos meninos e as medidas de associação revelaram duas vezes mais atividade física nesse grupo [RP=2,04 (1,56-2,67)], quando comparado com o das meninas. Cerca de 30% dos meninos e 40% das meninas disseram não realizar atividades com gasto de energia nos períodos livres, sendo os meninos 32% menos ociosos do que as meninas [RP=0,68 (0,60-0,76)].

Conclusões: Observou-se alta prevalência tanto de sobrepeso e obesidade quanto de hábitos pouco saudáveis na população estudada, independentemente da presença de alterações do peso. Estratégias de promoção da saúde nas escolas devem ser estimuladas, no sentido de se incentivar hábitos e comportamentos saudáveis entre todos os estudantes.

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Introduction

Obesity is a chronic disease characterized by excess body fat with consequent health damage.¹ The World Health Organization (WHO) considers obesity a public health problem associated with high morbidity and mortality rates.¹ According to the Brazilian Association for the Study of Obesity and Metabolic Syndrome (ABESO), exogenous obesity represents approximately 95% of cases² and, similarly to what occurs in adults, childhood obesity is also accompanied by comorbidities such as systemic arterial hypertension (SAH), glucose intolerance, orthopedic problems and cholesterol metabolism alterations, among others.² Genetic factors and a positive balance between caloric intake and energy expenditure are some of the etiological factors involved in the pathogenesis of obesity.² Among the exogenous factors, overfeeding in the early years of life seems to influence the number of adipocytes, probably explaining why 50%–65% of obese adults were obese children.³ Adolescence is considered by some authors one of the most critical periods of human development, during which typical physiological changes seem, among other things, to increase the risk of obesity development and its future persistence.⁴

However, obesity is known to have a multifactorial etiology, where environmental and behavioral factors seem to influence its onset, most likely justifying the variable prevalence observed between different regions. The low prevalence rates of obesity in children and adolescents

are observed in Asia (2.9%) and Africa (3.9%),^{5,6} whereas the highest ones are found in the United States (31.8%).⁷ In Latin America, the prevalence of obesity among preschool children is 6.2% in Costa Rica, 6.5% in Bolivia, 7% in Chile and 7.3% in Argentina.⁸ Brazilian Studies in the North and Northeast regions show that overweight and obesity affect 25%–30% of children between five and nine years, whereas in the Southeast and Midwest regions this percentage ranges from 32% to 40%.⁹ Another study in Rio Grande do Sul and Santa Catarina found a prevalence of 14.4% of overweight and 7.5% of obesity in preschool children.¹⁰

Although the state of São Paulo has the highest population concentration and it is where many studies on this subject are developed, the few studies in the literature involving the population of schoolchildren in preadolescence and adolescence date back to more than 10 years and have prevalence rates that vary considerably.^{11–14} Additionally, data on obesity/overweight in healthy children who do not undergo medical treatment or supervision and have overweight as the only factor to be investigated, are also scarce.

Therefore, considering that approximately 97% of children and adolescents aged 7–14 years are enrolled in public and private schools¹⁵ and most of them spend much of their time at school, this study aimed to determine the prevalence and possible risk factors associated with overweight and obesity in schoolchildren aged between 10 and 16 years, in order to quantify the local occurrence of this important problem considered to be of public health concern and

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