



ORIGINAL ARTICLE

Daily meal frequency and associated variables in children and adolescents^{☆,☆☆}

Fabiana A. Silva^a, Samara M. Candiá^a, Marina S. Pequeno^a, Daniela S. Sartorelli^b, Larissa L. Mendes^c, Renata M.S. Oliveira^a, Michele P. Netto^a, Ana Paula C. Cândido^{a,*}

^a Universidade Federal de Juiz de Fora (UFJF), Departamento de Nutrição, Juiz de Fora, MG, Brazil

^b Universidade de São Paulo (USP), Faculdade de Medicina de Ribeirão Preto, Departamento de Medicina Social, São Paulo, SP, Brazil

^c Universidade Federal de Minas Gerais (UFMG), Departamento de Nutrição, Belo Horizonte, MG, Brazil

Received 30 October 2015; accepted 20 April 2016

KEYWORDS

Meal frequency;
Cardiovascular risk factors;
Children and adolescents

Abstract

Objective: To investigate the frequency distribution of daily meals and its relation to demographic, socioeconomic, behavioral, anthropometric and biochemical factors in children and adolescents.

Methods: This was a cross-sectional study with a representative sample of 708 schoolchildren aged 7–14 years. Data on personal information, socioeconomic status, physical activity and number of meals were obtained through semi-structured questionnaire and consumption by 24-h recall and food record. Weight and height measurements were also performed to calculate the body mass index. Finally, blood samples were collected for analysis of total cholesterol, high- and low density lipoprotein, triglyceride, and glucose levels. Descriptive statistics, the Mann–Whitney test, and Poisson regression were used in statistical analysis.

Results: Meal frequency <4 was associated in children, family income <3 Brazilian minimum wages (PR = 5.42; 95% CI: 1.29–22.77; $p = 0.021$) and adolescents, the number of sons in the family >2 (PR = 1.53; 95% CI: 1.11–2.11; $p = 0.010$). Even in the age group of 10–14 years, <4 meals was related to higher prevalence of body mass index (PR = 1.33; 95% CI: 1.02–1.74; $p = 0.032$) and low-density lipoprotein (PR = 1.39; 95% CI: 1.03–1.87; $p = 0.030$) higher after adjustments.

[☆] Please cite this article as: Silva FA, Candiá SM, Pequeno MS, Sartorelli DS, Mendes LL, Oliveira RM, et al. Daily meal frequency and associated variables in children and adolescents. J Pediatr (Rio J). 2016. <http://dx.doi.org/10.1016/j.jpmed.2016.04.008>

^{☆☆} Study conducted at the Department of Nutrition, Instituto de Ciências Biológicas, Universidade Federal de Juiz de Fora (UFJF), Juiz de Fora, MG, Brazil

* Corresponding author.

E-mail: anapaula.candido@ufjf.edu.br (A.P. Cândido).

<http://dx.doi.org/10.1016/j.jpmed.2016.04.008>

0021-7557/© 2016 Sociedade Brasileira de Pediatria. Published by Elsevier Editora Ltda. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

PALAVRAS-CHAVE

Frequência de refeições;
Fatores de risco cardiovascular;
Crianças e adolescentes

Conclusion: Lower frequency of meals was related to lower income in children and adolescents, larger number of sons in the family, and increased values of body mass index and low-density lipoprotein.

© 2016 Sociedade Brasileira de Pediatria. Published by Elsevier Editora Ltda. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Frequência de refeições diárias e variáveis associadas em crianças e adolescentes**Resumo**

Objetivo: Investigar a distribuição da frequência de refeições diárias e sua relação com fatores demográficos, socioeconômicos, comportamentais, antropométricos e bioquímicos em crianças e adolescentes.

Métodos: Este foi um estudo transversal realizado com uma amostra representativa de 708 escolares com idades entre 7 e 14 anos. Os dados sobre informações pessoais, nível socioeconômico, atividade física e número de refeições foram obtidos através de questionário semiestruturado e o consumo através de recordatório de 24h e registro alimentar. Medidas de peso e altura também foram realizadas para cálculo do índice de massa corporal. Por fim, coletaram-se amostras de sangue para análises de colesterol total, lipoproteína de baixa e de alta densidade, triglicerídeos e glicemia. Análises descritivas, Mann-Whitney e regressão de Poisson foram utilizadas nas análises estatísticas.

Resultados: Frequência de refeições < 4 se associou, em crianças, a renda familiar < 3 salários (RP = 5,42; IC 95%: 1,29- 22,77; p = 0,021) e em adolescentes, ao número de filhos na família > 2 (RP = 1,53; IC 95%: 1,11- 2,11; p = 0,010). Ainda na faixa etária de 10 a 14 anos, < 4 refeições se relacionou a maior prevalência de índice de massa corporal (RP = 1,33; IC 95%: 1,02-1,74; p = 0,032) e lipoproteína de baixa densidade (RP = 1,39; IC 95%: 1,03- 1,87; p = 0,030) elevados após ajustes.

Conclusão: Menor frequência de refeições se associou a menor renda em crianças e em adolescentes a maior número de filhos na família e valores aumentados de índice de massa corporal e lipoproteína de baixa densidade.

© 2016 Sociedade Brasileira de Pediatria. Publicado por Elsevier Editora Ltda. Este é um artigo Open Access sob uma licença CC BY-NC-ND (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

It is well established that cardiovascular diseases (CVD) originate in childhood and that two of their main modifiable risk factors, overweight and dyslipidemia, have been increasingly observed in children and adolescents, which are often diagnosed with at least one of these factors.¹

The worldwide prevalence of childhood obesity has increased considerably over the past three decades,²⁻⁴ especially in countries undergoing economic transitions that favor industrialization and urban and Western lifestyles,³ and, time of excess weight is directly associated with mortality from CVD.⁵

Atherosclerosis is the physiopathological substrate for CVD that begins in childhood and develops over the years.^{1,6} Fatty streaks, the precursors of atherosclerotic plaques, appear in the intimal layer of the aorta at three years of age and in the coronaries during adolescence, having dyslipidemia as a traditional risk marker of this process.⁷

Evidence to date attributes the increased prevalence of excess weight and dyslipidemias to the interaction between genetic and environmental factors. Regarding diet, the consumption of energy and macronutrients has been widely investigated. However, the etiology of existing

eating models may not fully explain the development of the risk factors for CVD; eating behaviors also need to be investigated.⁸

Among the variables related to these behaviors, a protective effect of higher frequency of daily meals on overweight and obesity has been detected in children and adolescents.⁹⁻¹¹ Furthermore, although this effect has been observed mainly in relation to total body mass, it has also been observed in relation to deleterious changes in serum lipids.^{11,12}

According to some authors, the habit of skipping meals contributes to dietary inadequacy and increased body weight, as the foods commonly consumed in certain meals are hardly eaten at other times throughout the day and may even be replaced by unhealthy foods.^{13,14} In addition to this effect that may be mediated by changes in food intake, changes in the postprandial energy expenditure that can predispose to long-term weight gain¹⁵ and increased serum cholesterol resulting from higher mean concentrations in plasma insulin peaks and greater area under the curve of insulin responses have also been suggested in irregular eating patterns.

Considering that eating behaviors – such as frequency of meals – may contribute to dietary inadequacy and to

Download English Version:

<https://daneshyari.com/en/article/8809846>

Download Persian Version:

<https://daneshyari.com/article/8809846>

[Daneshyari.com](https://daneshyari.com)