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#### **REVIEW ARTICLE**

## Brazilian infant and preschool children feeding: literature review\*



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#### **KEYWORDS**

Feeding; Child nutrition; Infant; Preschool child; Brazil

#### **Abstract**

*Objective*: To assess the feeding profile of Brazilian infants and preschool children aged 6 months to 6 years, based on the qualitative and quantitative analysis of food and nutrient intake.

*Data source*: This review analyzed studies carried out in Brazil that had food survey data on infants and preschool children. The search was limited to publications from the last 10 years included in the LILACS and MEDLINE electronic databases.

Data summary: The initial search identified 1480 articles, of which 1411 were excluded after the analysis of abstracts, as they were repeated or did not meet the inclusion criteria. Of the 69 articles assessed in full, 31 articles contained data on food survey and were selected. Only three studies concurrently assessed children from different Brazilian geographical regions. Of the assessed articles, eight had qualitative data, with descriptive analysis of food consumption frequency, and 23 had predominantly quantitative data, with information on energy and nutrient consumption.

Conclusions: The articles assessed in this review showed very heterogeneous results, making it difficult to compare findings. Overall, the feeding of infants and preschool children is characterized by low consumption of meat, fruits, and vegetables; high consumption of cow's milk and inadequate preparation of bottles; as well as early and high intake of fried foods, candies/sweets, soft drinks, and salt. These results provide aid for the development of strategies that aim to achieve better quality feeding of Brazilian infants and preschoolers.

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#### PALAVRAS-CHAVE

Alimentação; Nutrição da criança; Lactente; Pré-escolar; Brasil

#### Alimentação do lactente e do pré-escolar brasileiro: revisão da literatura

#### Resumo

Objetivo: Verificar o perfil alimentar do lactente e do pré-escolar brasileiro, na faixa etária de 6 meses aos 6 anos, a partir da análise qualitativa e quantitativa do consumo de alimentos e nutrientes.

Fontes de dados: Nesta revisão foram analisados estudos realizados no Brasil que apresentavam dados de inquéritos alimentares de lactentes e pré-escolares. A busca foi limitada às publicações dos últimos 10 anos, incluídas nas bases de dados eletrônicas Lilacs e Medline.

Síntese dos dados: Na pesquisa inicial foram identificados 1480 artigos, 1411 foram excluídos após análise dos resumos, por serem repetidos ou não preencherem os critérios de inclusão. Dos 69 artigos avaliados na íntegra, foram selecionados 31 artigos que continham dados sobre alimentação. Apenas 3 trabalhos avaliaram concomitantemente crianças de diferentes regiões geográficas brasileiras. Dos artigos analisados, 8 apresentavam informações qualitativas, com análise descritiva da frequência de consumo alimentar e 23, informações predominantemente quantitativas, com dados de consumo energético e de nutrientes.

Conclusões: Os artigos analisados na presente revisão apresentaram resultados bastante heterogêneos, dificultando a comparação dos achados. De um modo geral, a alimentação do lactente e do pré-escolar é caracterizada pelo baixo consumo de carnes, frutas, legumes e verduras, por elevado consumo de leite de vaca e inadequação no preparo de mamadeiras, além de precoce e elevado consumo de frituras, doces, refrigerantes e sal. Nossos resultados constituem subsídios para a elaboração de estratégias que visem melhor a qualidade da alimentação do lactente e do pré-escolar brasileiro.

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#### Introduction

Growth and development are two complex, interrelated phenomena that are characteristic of pediatric patients. Growth depends on the interaction of genetic factors, which have their expression modulated by environmental, socioeconomic, emotional, and nutritional factors. Therefore, feeding is important not only to provide full growth and development, but also because it is involved in the genesis of the main nutritional disorders in childhood, such as protein–energy malnutrition, obesity, iron deficiency, and hypovitaminosis A.

One aspect that has received increasing attention in recent decades is the association between feeding and nutritional status in early life and the development of chronic diseases in adulthood.<sup>2-5</sup> In this context, a systematic review<sup>6</sup> showed that long-term breastfeeding is associated with lower values of blood pressure, total cholesterol, prevalence of overweight, and type 2 diabetes mellitus, as well as better intellectual development.

Based on cross-sectional studies carried out in Brazil in the 1970s, 1980s, and 1990s, a rapid decrease was observed in the prevalence of protein–energy malnutrition, as well as an increased prevalence of overweight and obesity, characterizing the nutritional transition phenomenon.<sup>5,7</sup> The observed changes have particular characteristics according to geographical regions of Brazil and social classes, and are the result of profound changes in the country over recent decades.<sup>7</sup> It should be noted that nutritional transition is a worldwide phenomenon. Across the world, the availability of food has increased by 10%, with a consequent

reduction in the prevalence of malnutrition and increasing obesity, which has become a severe concern in terms of public health. It is considered that this phenomenon can be explained, at least in part, by the influence of economic growth, urbanization, and globalization of the dietary pattern.<sup>8</sup>

Despite the importance of the dietary pattern of infants and preschool children, there are no nationwide data to address this issue in Brazil, with the exception of the National Survey on Women's and Children's Health (Pesquisa Nacional de Demografia e Saúde da Criança e da Mulher [PNDS]), 9 with the last survey performed in 2006.

It should be noted that the PNDS data are primarily qualitative, and are related to breastfeeding and complementary feeding.

As it is necessary to explore further scientific production in addition to the PNDS<sup>9</sup> regarding dietary patterns in childhood, this article sought to gather not only current information on the feeding quality of Brazilian infants and preschool children, but also to highlight the main inadequacies related to nutrient intake in this population. Considering that there is some concern about the influence of nutritional inadequacies occurring from pregnancy to preschool age in the occurrence of long-term noncommunicable diseases and illnesses, as well as the high prevalence in Brazil of deficiency diseases in childhood, this review aimed to analyze studies on the feeding pattern of infants and Brazilian preschool children, between 6 months and 6 years of age, analyzing qualitative and quantitative information about the consumption of major food and nutrients groups.

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