

Evaluation of food labeling of cereal foods for infants and children in early childhood

Leontina Fernandes Britto¹
Antônio de Pádua Valença da Silva²
Luana Guabiraba Mendes³
Stella Regina Arcanjo Medeiros⁴

¹Universidade Estadual do Ceará, Programa de Pós-graduação em Nutrição e Saúde. Fortaleza-CE, Brasil.

²Universidade Estadual do Ceará, Curso de Nutrição, Curso de Especialização em Ciência de Alimentos. Fortaleza-CE, Brasil.

³Universidade Estadual do Ceará. Programa de Pós-graduação da Rede Nordeste de Biotecnologia. Fortaleza-CE, Brasil.

⁴Universidade Federal do Piauí, Curso de Nutrição. Picos-PI, Brasil.

Correspondence
Leontina Fernandes Britto
E-mail: leontinafbritto@hotmail.com

Abstract

Objective: To evaluate conformity of nutritional information and labels of cereal foods for infants and children in early childhood to current legislation. *Materials and Methods:* We checked 30 product labels, of which 25 were cereal flour brands, four beverages and one baby food brand ready for consumption sold in three large supermarkets in Fortaleza, Ceara state, Brazil. The labels were photographed and analyzed through a checklist of items of the Collegiate Board Resolutions no. 259/02, 360/03, 222/02, Decrees no. 36/98 and 29/98, and Law no. 11265/06. Data were grouped into a database and statistically analyzed in a descriptive way. *Results:* We observed 12 nonconformities concerning the labeling of packaged foods, nutritional information, technical regulation of cereal-based foods for babies and the Brazilian Standard for Commercialization of Foods for Infants and Young Children. *Conclusion:* Given the reduced nonconformity percentage, more studies would be advisable to elucidate this problem, more inspections of this type of product as well as educational actions to help parents and caregivers to better recognize the most appropriate products for their children through the labels of these products.

Key words: Child Nutrition; Nutrition Facts; Food Labeling.

Introduction

With the widespread importance given to healthy eating by the most diverse communication media, it has been observed an interest in the consumption of carbohydrates and dietary fibers, which are present in various foods such as roots, tubers, fruits, cereal grains, among others.¹

Cereals come from grasses whose seeds are produced in the form of spikes, such as rice, maize, oat, sorghum, barley and quinoa. They have been used as food since the most ancient civilizations and are important in human nutrition because they are concentrated foods, providing large amounts of carbs, proteins and dietary fibers, and are easy to preserve.²

The Brazilian Ministry of Health, in the *Ten steps for healthy eating: a guide for children under two years*, recommends that after six months of age children should be fed supplementary foods such as cereals, tubers, meats, legumes, fruits and vegetables. If the child is still being breastfed, these foods should be provided three times a day; if the child is weaned from the breast, the frequency of consumption should be five times a day.³

According to Law no. 11265/2006, cereal-based foods for infants and children in early childhood are “any cereal food for infants after the sixth month of life and young children, respecting the child’s physiological maturity and neurological-psychomotor development”.⁴ (Author’s translation). With the increasing presence of women in the labor market, many mothers in this group have been forced to introduce very early to the babies’ diet baby formulas, whole milk, supplementary foods and cereals, so that they could be back to work.

Aware of this mothers’ need, the food industry has increasingly developed products for infants and young children and used marketing strategies to promote these products.^{5,6} Studies have observed increased consumptions of these foods by children, as the one conducted by Sousa & Araújo,⁷ who analyzed the food pattern of babies aged six to 24 months living in the rural area in the state of Maranhão. The authors noticed that breast milk associated with porridge were the only foods offered to 13.5% of the children studied and also found that cereal porridge was the food option for 74 children, out of which 46 (39%) had it as the only meal.

Farias Junior & Osório⁸ investigated the dietary pattern of children under five years in the state of Pernambuco and found that cereal foods were consumed from six months of age and diminished as the children grew. Conversely, when correlated with household income, the consumption of cereal foods increased as the income increased, and 40.1% of the children were fed cereal foods.

Based on these information, the present study has the purpose of evaluating the labels and nutrition facts and compliance with the Brazilian Standard for Commercialization of Foods for Infants, Young Children, Nipples, Dummies and Bottles (NBCAL) regarding cereal foods for infants and children in early childhood. These foods comprise a significant share of this

population's dietary pattern, so this research will contribute to check conformity of this kind of food with current legislation.

Methodology

This is a quantitative, descriptive, cross-sectional study that assessed the adequacy of the nutritional information and labels of cereal foods for infants and young children sold in three large supermarkets in Fortaleza-CE, during the first weeks of September 2014, and compliance with the Brazilian Standard for Commercialization of Foods for Infants and Young Children, Nipples, Dummies and Bottles and to the Technical Regulation for cereal foods for babies and young children.

To collect data, all packaged foods within the predefined criteria that were available for sale in each supermarket were examined and photographed. In total, 29 brands were examined, out of which 25 of cereal flours, four brands of prepared beverages and one jar of baby food, which were codified according to the collection sequence, using two letters and two numbers, as shown in Table 1.

Table 1. Codification of samples of labels and nutritional information of baby cereals. Fortaleza-CE, 2014.

Products analyzed	Sample codes
Cereal flours	FC01, FC02, FC03, FC04, FC05, FC06, FC07, FC08, FC09, FC10, FC11, FC12, FC13, FC15, FC16, FC17, FC18, FC19, FC20, FC21, FC22, FC23, FC24, FC25
Prepared beverages	BP01, BP02, BP03, BP04
Prepared pureed foods	PP01

As data collection instrument, the Checklist for Cereal Food for Infants and Young Children was used, adapted from the Chater's study.⁹ The checklist comprised the following items: product information (name, code, brand and manufacturer); labels of packaged foods according to resolution RDC no. 259 of September 20, 2002; nutrition facts table according to resolution RDC no. 360 of December 23, 2003; technical regulation for kids cereal foods according to Decree no. 36 of January 13, 1998 and Decree no. 29 of January 13, 1998; and norms for production and

sale of foods for infants and children under three years according to Law no. 11265 of January 3, 2006 and Resolution RDC no. 222, of February 05, 2002; and, finally, Law no. 10674, of May 16, 2003, which regulates the footnote about gluten.^{4,10-15} The collected information was checked for each topic of the regulating legislation and classified as conform (C), nonconform (NC) and not applicable (NA).

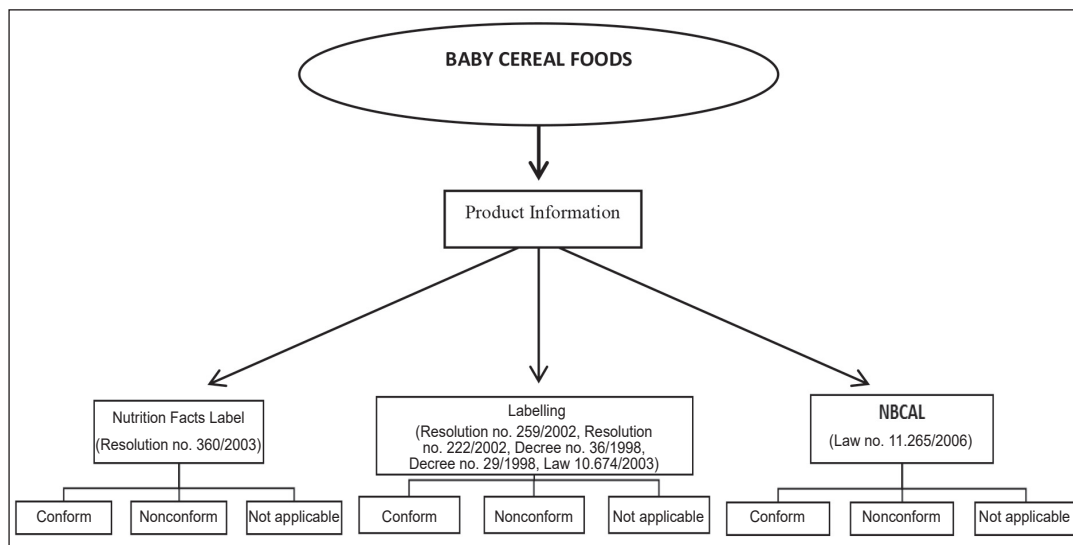


Figure 1. Flow chart of data analysis. Fortaleza-CE, 2014

The data obtained were grouped into a dataset and subjected to a descriptive statistical analysis via Excel 2013 which was also used to construct the tables.

Results

In the present study, 30 labels of cereal foods for infants and young children were examined, of which 10 indicated 12 nonconformities (Table 2) only in some brands of cereal flours. Nonconformities included mandatory information, nutrition facts, technical regulation on baby cereal foods and the Brazilian Standard for Commercialization of Foods for Infants and Young Children.

Table 2. Adequacy of the food labels of cereals for kids according to current legislation. Fortaleza-CE, 2014.

Criteria analyzed	N	%	Nonconformity item
Mandatory information (p= 0.046)			
Conform	28	93.3	
Nonconform	2 ^a	6.7	Product origin missing
Nutrition facts table (p= 0.033)			
Conform	29	96.7	
Nonconform	1 ^b	3.3	Calories not informed
Technical regulation of cereal foods for kids (p= 0.074)			
Conform	24	80.0	
Nonconform	6 ^c	20.0	Lacking list of ingredients after preparation Lacking reference as baby food
Brazilian Standard for Commercialization of Foods for Infants, Young Children, Nipples, Dummies and Bottles (NBCAL) (p= 0.055)			
Conform	27	90.0	
Nonconform	3 ^d	10.0	Age specification Lacking notice of Ministry of Health
Warning notice about gluten			
Conform	30	100	-

^a Brands 20 and 21;^b Brand 17;^c Brands 17,19, 24, 25, 26 and 27;^d Brand 18, 19 and 28;

Discussion

The Resolutions of the Collegiate Board – RDC no. 259/2003, which regulates packaged food labeling, RDC no. 360/2003, which regulates nutritional information in packaged foods – and Law no. 10674/2003, which requires that food products inform about gluten content, are the basic legislation for packaging and labeling in Brazil.^{10,11,15-17}

The Brazilian government, concerned about the widespread marketing of products for infants and young children and with the decreased rates of exclusive breastfeeding, created and approved the NBCAL in 1988, which regulates the commercial promotion and labeling of foods and other products for newborns and children under three years of age.¹⁸

In 1992, the first NBCAL revision was carried out after various monitoring sessions and meetings with diverse bodies such as the National Health Inspection Agency (ANVISA) and the Public Prosecutor Office, resulting in the Decree no. 2051, of November 8, 2001, which set out new criteria for NBCAL, in Resolution RDC no. 222 of August 5, 2002, which regulates the commercial promotion of foods for infants and young children, and in the RDC no. 221 of August 5, 2002, which regulates dummies, bottles and nipple shields. It was also created the Law no. 11265, of January 3, 2006 which regulates the marketing of foods for infants and young children as well as childcare products and the like, thus broadening the NBCAL.^{4,14,18-20}

Concerning the packaged foods labels, in two products examined the product origin did not appear, i.e. there was no information printed on the label about the manufacturer, as required by resolution RDC no. 259/2002.¹⁰ Among the mandatory information that should appear in the labels are identification of the product origin, name of the manufacturer or producer or fractionation industry or brand owner; complete address; country and city of origin, and registration number or identification code of the manufacturer as registered at the competent authority. In addition, these words should also be used to identify the origin: “made in ...”, “... product” or “... manufacturer”. This was also observed by Yoshizawa et al.,¹⁶ who observed that in ten labels of cereal foods for kids the required information on the product origin was missing (as required by resolution RDC no. 259/2002) and by Chater,⁹ who found 27 nonconformities in 16 labels of cereal foods for kids examined. Among these nonconformities, information on the product origin was also missing.

With respect to the nutrition facts label, only one product did not inform the calories value, and the resolution RDC no. 360/2002¹¹ establishes that the amount of calories and nutrients per serving (carbs, proteins, total fats, saturated fats, trans fats, dietary fiber and sodium) must appear in the table. In the study conducted by Smith & Almeida-Muradian,¹⁷ who examined the labels of various kinds of products, among them cereal foods for children, observed that in the

nutrition facts table were the greatest number of nonconformities, i.e. 26.9% of the labels had failures regarding the nutritional information. Such failures included the following: the values declared in the nutrition facts table did not correspond to the amount of nutrients found in the food; noncompliance with the obligation of declaring trans fat in the supplementary nutritional information; and supplementary nutritional information different from or not required by law. Conversely, in the study by Silva, Dias & Ferreira¹⁸ these failures had not occurred because no nonconformity was found with respect to the labels mandatory information.

Concerning adequacy to the technical regulation for baby cereal foods, it was observed that six of the products examined were not in conformity with legislation. The nonconformities included lack of reference to baby food (according to Decree no. 36/1998,¹² in the main label of the product the reference to the product should appear, expressed as “baby cereal or cereals”); and lack of the list of ingredients after preparation. According to the same regulation, in the other labels of the package it should appear the complete list of ingredients, in decreasing order of respective percent/quantity; and when a fluid must be added to the food before being consumed, the list must be headed by the indication “ingredients after preparation”, without including the ingredients of the liquids added. However, Vasconcelos¹⁹ found that all baby cereal foods were as declared in the specific label.

Regarding compliance to the Brazilian Standard for Commercialization of Foods for Infants and Young Children, Nipples, Dummies and Bottles (NBCAL), regulated by Law no. 11265/06 and by resolution RDC no. 222/02, only three products had nonconformities, all of them regarding lack of information on the product age and lack of description of the mandatory notice, as set out by the Ministry of Health. According to the law, the front labels of these products must include the age of the child from which the product can be used, as well as the following information, easily visible and readable: “The Ministry of Health warns: this product cannot be used for children under 6 (six) months of age, unless expressly prescribed by a physician or dietitian. Breastfeeding prevents infections and allergies as is recommended until 2 (two) years of age or over”.

In studies conducted by Smith & Almeida-Muradian¹⁷ and Silva, Dias & Ferreira,¹⁸ in Goiânia-GO; Paula, Chagas & Ramos,²⁰ in Teresina-PI, and Vasconcelos,¹⁹ in Camaçari-BA, who examined the labels of foods for infants and children under three years, nonconformities regarding the NBCAL were also found, among them: target age of the product not informed; the mandatory notice was missing; not allowed use of illustrations and phrases. Therefore, the products demonstrated noncompliance with the criteria set out in the NBCAL.

Conclusion

This study found that most of the cereal-based foods for infants and young children meet the current legislation, although exhibiting 33% of nonconformities. This fact was also found in earlier works. Therefore, more studies could be conducted to elucidate even further these issues, and more inspections of this kind of product should also be advisable.

As a preventive measure, educational actions would help parents and caregivers to understand the labels of these products and recognize the most adequate products for their children, which are very used in the meals of children in early childhood, due to their practicality and acceptability.

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