





## Quality of children's menus in malls in Brazil

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### Abstract

*Objectives:* characterize the availability and assess the nutritional quality of children's menus offered in regular and fast food restaurants in Brazilian malls.

*Methods:* this is an observational and cross-sectional study. Data were collected on the websites of each restaurant and in food sales applications, with a questionnaire consisting of two sections: characterization of the restaurant and characterization of the children's menu. Data collection took place in ten capitals in the five regions of Brazil.

*Results:* 116 children's menus were evaluated. The study identified a higher number of regular ( $n=70$ , 60%) than fast-food ( $n=46$ , 40%) restaurants. The cooking methods most used in the main dishes were grilled ( $n=236$ , 64%) and boiled ( $n=74$ , 20%), and in the side dishes were boiled ( $n=204$ , 53%) and fried ( $n=109$ , 28%). Only 40% ( $n=46$ ) of the menus contained vegetables. Less than 10% ( $n=seven$ ) offered fruit as dessert, 31% ( $n=36$ ) had drinks included in the children's menu and 22% ( $n=25$ ) offered gifts associated with the menu. Only 32 (28%) restaurants had the combination of beans and rice.

*Conclusion:* most of the options offered to children were of low nutritional quality, with low offer of vegetables, fruits and the traditional beans and rice. The beverages included in the menus, most of them sugary, can contribute to a high-energy intake. There is a need to provide healthy options and encourage these choices.

**Key words** Child nutrition, Food quality, Nutritive value, Food service



## Introduction

Brazil has been challenging for several decades a scenario characterized by the increase of overweight and obesity in all age groups, being one of the most pressing health problems, since it is a risk factor for a large array of chronic diseases.<sup>1,2</sup> Data from the Food and Nutrition Surveillance System (SISVAN – Portuguese acronym), from 2020, reveal that 15.9% of children under five years old and 31.8% of children between five and nine years old had weight excess according to the Body Mass Index (BMI).<sup>3</sup>

Changes in eating habits are frequently reported as one of the main factors of this epidemic. Besides biological determinants, the strong influence of the environment on the development of infant obesity should also be considered, and measures that focus on the nutritional environment should be developed and supported.<sup>1</sup>

Children consumption of meals in regular restaurants and fast-food restaurants have been associated with a higher daily energy intake, as well as saturated fat, sodium and sugar, which lead to speculations that eating outside home may be an important factor concerning the prevalence of infant obesity.<sup>4</sup> One of the causes of these associations is that people underestimate the energy content of restaurant food, and, generally, do not have immediate access to nutritional information at the moment of purchase.<sup>5</sup>

In an attempt to promote and contribute to the establishment of healthy eating habits, from better eating choices, the Ministry of Health (MH) released the Dietary Guidelines for Brazilian Children Under 2 Years of Age. Among the twelve steps for a healthy diet for children, the Guidelines recommend an adequate and healthy diet to be offered also outside home and that the parents and guardians be critical in relation to the publicity linked to the food, since its essential function is to increase sales.<sup>6</sup>

It is observed that several fast food and regular restaurants offer rewards, such as toys, in the choice for less healthy meals, such as French fries, soft drinks and hamburgers.<sup>7</sup> According to Karageorgiadis,<sup>8</sup> the “combo” offered by companies, the trinket that accompanies the food, is characterized by being exclusive (not found in other companies), with availability determined by a limited period, and, most times, collectible and associated with a theme (movies, cartoons or child stories characters). The author indicates that the distribution of toys associated with food, known as “tie-in sale”, interferes with the eating habits of children, transforming the basic and necessary action of eating in a consumerist action: stimulating the desire to eat a determined food to obtain “for free” the trinket that is part of the collection.

Therefore, restaurants represent environments that may influence negatively or positively food intake among children. Good eating choices in restaurants are capable of improving dietary quality and attenuate the excessive energy intake, contributing to the building of healthier eating habits.

In this context, the aim of this study was to characterize the availability and assess the nutritional quality of children’s menus offered in regular and fast food restaurants in Brazilian malls.

## Methods

An observational and cross-sectional study was conducted. Data collection occurred from September 2020 to June 2021 in regular and fast food restaurants from malls, which offered restaurant or gastronomic service to clients, located in two capitals from each of the five Brazilian regions, chosen randomly.

It was defined as regular restaurant the settlements that offer complete services and, generally, that have more varied menus, and fast food restaurants those with fast services, on convenience, according to the classification established by U.S. Department of Commerce Economics and Statistics Administration (2000).<sup>9</sup>

Were excluded from the study restaurants found in the search performed in Google® website, but which for any reason were not functional and those that did not present children’s menu. Also, the companies that were repeated in the capital and region.

Figure 1 exhibits a diagram with the flow for identification and selection of settlements analyzed in the study. The search found 1049 restaurants and 338 had a children’s menu.

Of the restaurants found with children’s menu, some fast food companies were repeated in all regions of Brazil, being them: “Bob’s®”, “Burger King®”, “Giraffas®” and “McDonald’s®”. Their children’s menu did not differentiate according to the regions.

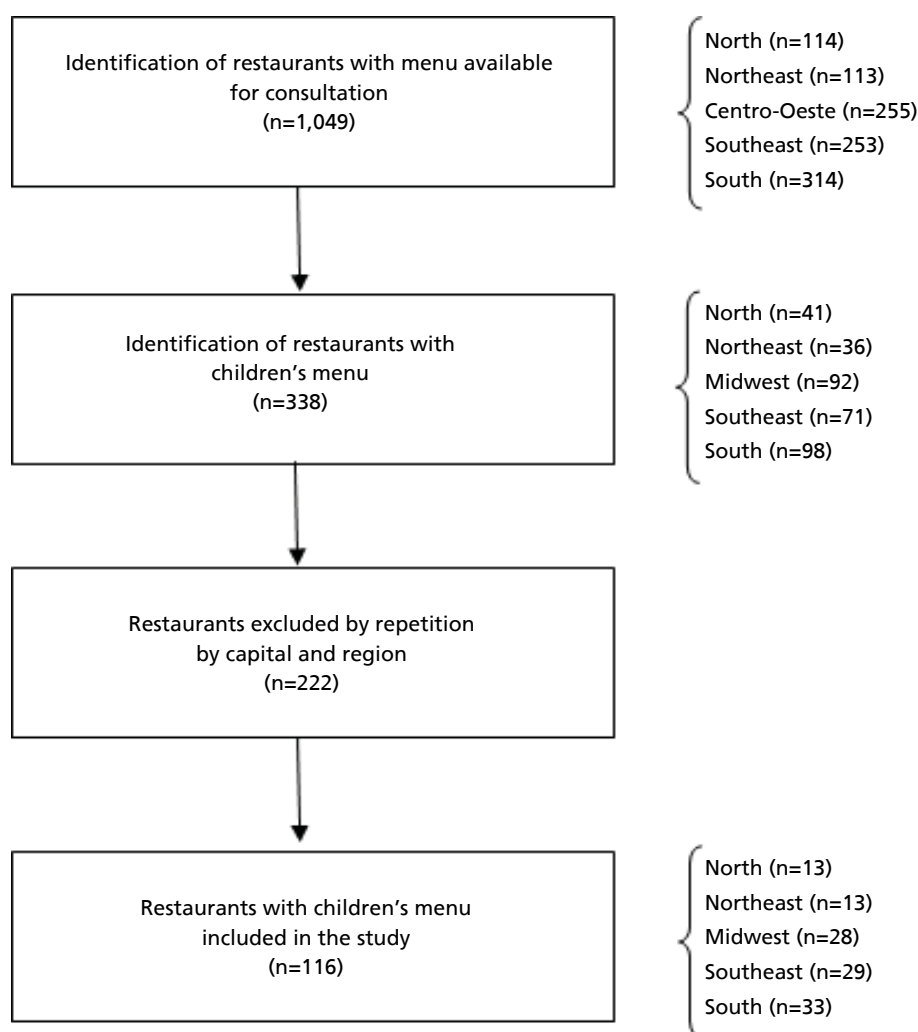
After excluding of the repeated restaurants by region or city, a sample of 116 restaurants with a children’s menu was obtained.

Data collection was performed in the websites of each restaurant and in food delivery applications, from the information that was publicly available for customers.

The data survey was performed in a judicious manner, and each restaurant was evaluated individually by two researchers properly qualified. Disagreements, doubts and difficulties in the classification of variables were discussed and defined collectively with the authors. Data were collected using the validated tool *Questionário para Caracterização dos Menus Kids em Restaurante* (Questionnaire for characterization of kids’ menu in restaurants), applied in Portugal and provided by the researchers to be used collaboratively in Brazil<sup>10</sup> and

Figure 1

Flowchart of identification and selection of restaurants (conventional and fast-food) with children's menu. Brazil and Regions, 2021.



adapted for use in Brazil. The tool was constituted by two sections: A: Characterization and location of restaurant, B: Characteristics of Children's Menu. The restaurant was classified according to the typology of the offered menu, which can be defined by: typical food of a determined state or country, cultural heritage and ethnical or culinary identity; traditional food, the one that do not present classic or typical elements, and, generally, follows regional tradition; others, for restaurants that do not identify the authenticity of menus according to tangible elements (ingredients), do not possess ethnical or culinary identity, or that combine more than one typology.<sup>9,10</sup>

Concerning characteristics of the children's menu, the following information was collected: number of options, items that compose it (meat/fish/egg, rice/potato/pasta, raw and cooked vegetables, sweet dessert, fruit); presence of any collectible toy or associated commercial trinkets (yes/no, if yes which one); offer of drinks, exhibition of information about allergens (no/yes) and if the children's menu has nutritional information (no/yes).

The nutritional quality of children's menu of restaurants was assessed by comparison of data collected by means of the collection tool and classified according to cooking methods, presence or absence of beverages and presence or absence of nutritional information and allergens in the menu.

The variables used in the study were: nutritional information (Yes or No); information on allergens (yes or no); offer of commercial gifts or collectible toys (yes or no); typology (American/ Arabic/ Armenian/ British/ French/ Italian/ Mexican/ Hamburger/ Japanese/ Traditional/ Uruguayan/ Seafood/ Others); methods of cooking (Baked/Boiled/Raw/Fried/Grilled/Braised); type of beverages (Water/Soft drink/Juice/Others); vegetarian or vegan option (yes or no); sweet dessert (yes or no); fruits (yes or no).

The quantitative data analysis was performed with the Microsoft Office Excel pack and variables were described in absolute and relative frequencies.

## Results

The study identified a higher number of restaurants classified as regular than those classified as fast-food restaurants, and the latter were classified according to its typology, with a higher number of traditional types, followed by hamburger shops. There were only five restaurants of the “seafood” type, distributed within the Midwest, Southeast and South Brazilian regions (Table 1).

The products offered in the menu as the most frequent main dishes were grilled chicken or chicken fingers (60%), grilled or breaded meat (57%), hamburger/cheeseburger (44%), pasta (25%) and grilled or breaded fish (16%).

As a side dish, the French fries option was the most frequent, being offered in 78% of restaurants. Another option that figured frequently was white rice (57%), followed by beans (28%) and salad (27%), composed mostly by lettuce, tomatoes, carrots and cabbage. The mashed potato option was present in 23% of restaurants.

Only 40% of restaurants offered vegetables added to the dish and 28% had the beans and rice combination as an option. (Table 2).

In 20 restaurants, it was verified the presence of fish, being the main option grilled fish fillet (65%), followed by fried breaded fish (50%). One of the Japanese food restaurants offered sushi (salmon sashimi – raw preparation and hot-philadelphia – fried preparation) in its children’s menu. Other Japanese food restaurants offered preparations such as Ramen soup, Japanese rice, meat, chicken and fish.

No restaurant presented vegetarian or vegan options in the children’s menu (Table 2).

It was observed, in Table 2, that 15 restaurants offered sweet desserts as part of the children’s menu.

The available dessert options were: milkshake, ice cream with syrup; “Danoninho®”; “Kinder Surprise®”; and “mini churros” with dulce de leche. Only two restaurants, one conventional and one fast-food, repeated within the regions, offered fruits (apple or fruit of the season) as dessert, however the restaurant offered the fruit or a sweet dessert.

It was verified that 31% offered beverages included in the price of the menu (Table 2). The most frequent option was the natural juice (orange juice or non-specified) and industrial juice, followed by soft drink. Water was offered only at “McDonald’s®”. Other beverage options observed in the menus were coconut water and iced tea.

Concerning offers associated with the children’s menus, 22% of the researched restaurants had associated gifts (Table 2), and all had collectible toys. More restaurants provided information in the menus regarding allergens (31%) than nutritional information (26%) (Table 2). We highlight that only one restaurant chain, present in North and Southeast regions, provided datasheets with complete nutrition facts in the company’s website.

In regard to the main cooking methods used in preparations of children’s menus (Table 3), it was observed that 64% of the offered options for main dishes were grilled, distributed between the options of beef and steak (cow/chicken), fish filet and hamburgers. With lower percentages (20%) were described the option of boiled main dishes, mainly in pasta preparations, normally accompanied by sauces made from fat (cheese) followed by fried preparations (11%) and bakery (5%). Concerning side dishes, the most used cooking method was boiling (53%), which corresponds to rice, mashed potatoes and pasta, followed by fried food (28%), used in the cooking of potatoes, polenta and eggs. The offer of raw food was

**Table 1**  
Offer of children’s menu in restaurants according to the meal’s typology. Brazil and Regions, 2021.

Region of Brazil	North		Northeast		Midwest		Southeast		South		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Restaurants with children’s menu	13		13		28		29		33		116	
Restaurant	4	31.0	7	54.0	22	79.0	19	65.0	18	55.0	70	60.0
Fast-food Restaurant	9	69.0	6	46.0	6	21.0	10	35.0	15	45.0	46	40.0
Typology												
American	0	-	1	8.0	0	-	0	-	0	-	1	1.0
Arabic	1	8.0	1	8.0	1	4.0	1	4.0	0	-	4	4.0
Armenian	0	-	0	-	1	4.0	0	-	0	-	1	1.0
British	1	8.0	0	-	0	-	0	-	0	-	1	1.0
French	0	-	0	-	2	7.0	0	-	1	3.0	3	3.0
Seafood	0	-	0	-	2	7.0	1	4.0	2	6.0	5	4.0
Hamburger Shop	4	30.0	3	23.0	5	18.0	10	34.0	7	21.0	29	25.0
Italian	0	-	0	-	3	10.0	4	14.0	8	24.0	15	13.0
Japanese	0	-	1	8.0	0	-	1	4.0	2	6.0	4	4.0
Mexican	0	-	0	-	1	4.0	1	4.0	0	-	2	2.0
Others	1	8.0	0	-	2	7.0	2	7.0	1	3.0	6	5.0
Traditional	6	46.0	7	53.0	11	39.0	9	31.0	10	31.0	43	36.0
Uruguayan	0	-	0	-	0	-	0	-	2	6.0	2	2.0

Table 2

Characterization of children's menu with regard to the food offer, collective gifts and presence of allergens and nutritional information, Brazil and Regions, 2021.													
Region of Brazil	North		Northeast		Midwest		Southeast		South		Total		
	n	%	n	%	n	%	n	%	n	%	n	%	
Restaurants with children's menu	13		13		28		29		33		116		
Menu													
Meat/Fish/Egg	13	100,0	13	100,0	28	100,0	29	100,0	32	97,0	115	99,0	
Rice/Potato/Pasta	12	92,0	13	100,0	26	93,0	29	100,0	32	97,0	112	97,0	
Vegetables	5	39,0	4	31,0	14	50,0	8	28,0	15	45,0	46	40,0	
Legumes	2	15,0	2	15,0	11	39,0	9	31,0	8	24,0	32	28,0	
Sweet dessert	3	23,0	1	8,0	4	14,0	5	17,0	2	6,0	15	13,0	
Fruit	1	8,0	1	8,0	2	7,0	2	7,0	1	3,0	7	6,0	
Beverages													
Water	1	8,0	1	8,0	1	8,0	1	3,0	1	3,0	5	4,0	
Soft drinks	2	15,0	1	8,0	4	14,0	5	17,0	2	6,0	14	12,0	
Juices	4	31,0	2	15,0	4	14,0	6	21,0	4	12,0	20	17,0	
Others*	2	15,0	1	8,0	5	18,0	4	14,0	3	9,0	15	13,0	
Others													
Collectible gifts	5	39,0	4	31,0	5	18,0	7	24,0	4	12,0	25	22,0	
Information on allergen foods	7	54,0	3	23,0	8	29,0	11	38,0	7	21,0	36	31,0	
Nutritional information	6	46,0	3	23,0	7	25,0	9	31,0	5	15,0	30	26,0	
Vegetarian/Vegan Option	0	-	0	-	0	-	0	-	0	-	0	-	

\* Others: iced tea, coconut water, pink lemonade, yerba mate tea.

Table 3

Cooking methods of preparations offered in main and side dishes of children's menu of restaurants. Brazil and Regions, 2021.				
Cooking method	Types of preparations			
	Main dish		Side dish	
	n	%	n	%
Grilled	236	64,0	10	3,0
Boiled	74	20,0	204	59,0
Fried	39	11,0	109	32,0
Baked	19	5,0	6	2,0
Braised	0	-	14	4,0
Total	368	100,0	343	100,0

found in 11% of the options and referred to salads like lettuce, tomatoes, carrots, cabbage and salmon sashimi.

## Discussion

The nutritional offer of the studied children's menu is characterized by offering of chicken and red meat, hamburgers and cheeseburgers, French fries and white rice, associated with the absence or low offer of vegetables, fruits, pulses and whole cereals. Different studies demonstrate that this kind of offer is associated with high values of saturated and trans fat, sodium and sugar, coinciding with high energy density and low

fiber and micronutrients density.<sup>4,11,12</sup> Yet, they report that meals destined to children in restaurants are of low nutritional quality, with high fat items and most provide small amounts of fruits, vegetables, pulses or options with low fat.<sup>4,11,12,13</sup>

The nutritional offer in the restaurants assessed, does not meet the main nutritional recommendations proposed by the Dietary Guidelines for Brazilian Children Under 2 Years of Age<sup>6</sup> and the Dietary Guidelines for the Brazilian Population (GAPB – Portuguese acronym).<sup>2</sup> A study conducted in restaurants from malls of four cities of the *Baixada Santista de São Paulo* (region of São Paulo state), concluded that the elaboration of children's menus demand

a more rigorous supervision for the adequateness of the preparations with the Guideline's recommendations.<sup>13</sup>

Another datum found was the higher offer of red meat and chicken options compared to fish and no alternative of vegetarian/vegan preparation as a protein source. A multicentric study carried out by Viegas *et al.*<sup>12</sup> assessed 192 infant menus in Portugal (46 menus), Chile (66 menus), Hungary (15 menus), Croatia (10 menus) including Brazil (57 menus), and observed that in all surveyed countries, there was a high offer of red meat and low offer of fish, with a trend to fried preparations. Red meat intake is associated with adequate and efficient protein source, being a well-established culture that may lead to a low offer of fish.<sup>14</sup> The GAPB debunks the idea of red meat as the unique protein source.<sup>2,15</sup>

The low offer of vegetables in the restaurants' menus was a worrisome datum, since the intake of this kind of food by children is low. It is worth recalling that the stimulation to the consumption should be executed in many contexts, such as at home, in schools and restaurants, in order to ensure an adequate intake,<sup>2,7,13</sup> as well as contributing to improve of eating habits. The low intake of vegetables, associated with the high ingestion of protein of animal origin, saturated fat and sugar, contributes to the increase of overweight and obesity, a global health problem.<sup>4,12,14,15,16</sup>

The high intake of sugary beverages by children is one more concern.<sup>17</sup> In this study, only one restaurant (repeated among the regions) had water as an option, and the others offer sugary alternatives, such as soft drinks, juices and tea. Some authors associate the consumption of these kind of beverages with obesity, cardiovascular diseases and type 2 diabetes, among other pathologies.<sup>17,18</sup> Furthermore, according to Alcatraz *et al.*,<sup>18</sup> the intake of these beverages is responsible for more than 721 thousand cases of overweight and obesity in Brazilian children and adolescents. Making these beverages separately available in the menu, with an extra cost, would be a way of limiting the consumption and promote water intake.<sup>10</sup>

In the menus assessed, the higher offer of sweet desserts rather than fruits drew attention. Studies demonstrated that added sugar might increase the risk of systemic arterial hypertension and high triglycerides in children.<sup>19,20</sup> These sweet dessert, once industrialized, are also rich in fat trans and have high energy value, which is also a risk factor for chronic diseases, including obesity.<sup>21</sup> The low offer of fruits demands attention and actions for the increase of their intake, since fruits are essential for infant development and are a protective factor against obesity.<sup>2</sup>

Twenty-five restaurants offered collectible gifts associated with promotional "combos" for kids. This option, since stimulating the desire of acquisition of the

toy or of the entire collection, may become the main reason for the purchase. Associated with this, is the stimulus to the habitual and excessive intake of industrialized and ultra-processed products with low nutritional quality, high values of sodium, sugar and fats, since most of times these products compose the "combo".<sup>10</sup> There are several promising strategies such as the association of the gift with the choice for a healthy option.<sup>12</sup> One example of this is the law of Santa Clara County (United States), which restricts the distribution of toys with meals that do not meet nutritional criteria.<sup>22</sup> Furthermore, a study with 337 children conducted in Ontario, Canada, demonstrated that when toys are offered only with meals that meet nutritional criteria, there is a trend for the choice of healthier options.<sup>23</sup>

Concerning nutritional and allergen information of food, it was found that they were available in less than half of the restaurants. Once this is not a common practice, it ends up impairing the eating choices of consumers when they eat outside their homes,<sup>5</sup> for there is an inclination for healthy food consumption when nutritional information are provided by restaurants.<sup>5,24,25</sup> The availability of nutritional information is mandatory for packed food in Brazil and in several countries, however, it is facultative for food commercialized in restaurants.<sup>24,25</sup> Although nutritional and allergens information has been mandatory in the USA since 2018, in regions of Canada since 2015 in Australia since 2010 and analyzed in the United Kingdom, it is not yet a reality in countries from Americas and Europe.<sup>26</sup>

Although the beans and rice combination is very popular in Brazil and remains present in Brazilians meals that prefer in natura or minimally processed food,<sup>2,6</sup> this practice has been gradually less present in reality. In this study, only 28% of restaurants offered this option, which corroborates the study conducted by Viegas *et al.*<sup>12</sup> carried out in five different countries and demonstrates that Brazil is the only country that offers pulses in children's menu, however in only 25% of the assessed menu.

The GAPB<sup>2</sup> and the Dietary Guidelines for Brazilian Children Under 2 Years of Age<sup>6</sup> recommends the resumption and valorization of the traditional Brazilian diet, based in combined preparations of cereals and pulses (e.g. rice and beans), fruits and vegetables and guide to "prefer, outside home, restaurants and places that serve fresh meals", avoiding, thus, fast-food restaurants and the intake of ultra-processed foods.

Facing an overweight and obesity epidemic, improving the nutritional quality of children's meals is an important priority. The efforts should also consider ways of encouraging good eating choices and making it possible to evaluate the food environment by families, by restaurant owners and by health professionals. A simple and low cost tool such as Kid's Menu Healthy Score (KIMEHS),

developed by Rocha *et al.*,<sup>27</sup> could be a good strategy to educate consumers about healthy eating choices, influence food environment and promote a food standard that is adequate for health.

The results of this study points to the need for making available healthy options in the children's menus, and to encourage, inform and allow the evaluation of these choices by the restaurants' owners and by consumers. This strategy may be considered a health promotion strategy and a differential for the restaurant. In this context, the presence of a nutritionist, besides contributing to the offer of a safe food, may significantly help with the elaboration of menus, healthy, nutritive, attractive and, mainly, tasteful for this public.

### Author's contribution

Venzke JG: conception, critical review of the intellectual content, interpretation of results, writing of the manuscript.

Aranalde GA and Scarparo ALS: analysis, interpretation of results, writing of the manuscript.

Rocha A: conception, critical review of the intellectual content, writing of the manuscript.

The authors approved the final version of the article and declare no conflict of interest.

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