UNIVERSIDAD DE COSTA RICA CCP Centro Centroamericano de Población INISA Instituto de Investigaciones en Salud

Doi: https://doi.org/10.15517/zw5de480
Volume 23, Issue 2, Sci. Art. january-june 2026

Población y Salud en Mesoamérica

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How to cite this article:

Pazos-Sibaja, Y., Alpízar-Araya, M., Rebolledo, N. & Jensen, L. M. Nutritional Quality of Children's Menus Offered by Fast-Food and Traditional-Food Chain Restaurants in Costa Rica. *Revista Población y Salud de Mesoamérica*, *23*(2). https://doi.org/10.15517/zw5de480

ISSN-1659-0201 http://ccp.ucr.ac.cr/revista/

Revista electrónica semestral
Centro Centroamericano de Población
Instituto de Investigaciones en Salud
Universidad de Costa Rica

ENu
Escuela de Nutrición
Población y Salud en Mesoamérica

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Nutritional Quality of Children's Menus Offered by Fast-Food and Traditional-Food Chain Restaurants in Costa Rica

Calidad nutricional de los menús infantiles ofrecidos en restaurantes de comidas rápidas y tradicionales de cadena en Costa Rica

Yendry Pazos-Sibaja[1], Mónica Alpízar-Araya[2], Natalia Rebolledo[3] and Melissa L. Jensen[4]

Abstract: Introduction: This study characterizes foods offered by children's menus at chain restaurants and determines whether differences exist in the nutritional quality between fast-food and traditional restaurants. **Methodology:** this is a cross-sectional study. After evaluating its inter-observer reliability, the Kids Menu Healthy Score (KIMEHS) was used to determine the nutritional quality of children's menus. Setting: Chain restaurants located within major shopping centers in the Greater Metropolitan Area (GMA) of Costa Rica in 2023. Participants: 74 unique chain restaurants were included. Outcomes: Availability of children´s menus, KIMEHS individual categories (presence/absence) and overall KIMEHS score. **Results:** Of all restaurants, 41.9% offered a children's menu. According to KIMEHS, 97% of these menus were considered unhealthy. There were no significant differences between fast food and traditional restaurants. The most frequent main dishes were chicken nuggets (83.9%), hamburgers (54.8%) and pasta (41.9%). Most restaurants (83.9%) included French fries as a side dish, while only 6.4% offered fruit in their menus. **Conclusion:** The children's menus offered had poor nutritional quality, with limited variety and availability of healthy options. There is a need for policies and practices that promote better nutritional quality of food available to children when they eat outside the home in the restaurant setting.

Keywords: children's menus, nutritional quality, food environment, KIMEHS.

Resumen: Introducción: Este estudio caracteriza la oferta alimentaria de los menús infantiles de restaurantes de cadena y determina si existen diferencias en la calidad nutricional entre restaurantes de comida rápida y restaurantes tradicionales. **Metodología:** Estudio con diseño transversal. Luego de evaluar la confiabilidad inter-observador, se utilizó el Kids Menu Healthy Score (KIMEHS) para determinar la calidad nutricional de los menús infantiles, de restaurantes de cadena ubicados en los principales centros comerciales de la Gran Área Metropolitana (GAM) de Costa Rica en 2023 (n=74). **Resultados:** Se evaluaron la disponibilidad de menús infantiles, las categorías individuales de KIMEHS (presencia/ausencia) y la puntuación global de KIMEHS. Del total de restaurantes, el 41,9% ofrecía un menú infantil. Según KIMEHS, el 97% de estos menús fueron considerados no saludables. No se encontraron diferencias significativas entre restaurantes de comida rápida y tradicionales. Los platos principales más frecuentes fueron "nuggets" de pollo (83,9%), hamburguesas (54,8%) y pasta (41,9%). La mayoría de los restaurantes (83,9%) incluyeron papas fritas como acompañamiento, mientras que solo el 6,4% ofreció fruta en sus menús. **Conclusión:** Los menús infantiles ofrecidos presentaron baja calidad nutricional, con variedad limitada y escasa disponibilidad de opciones saludables. Se recomienda la formulación de políticas que promuevan una mejor calidad nutricional de los alimentos disponibles para la niñez cuando come fuera del hogar en restaurantes.

Palabras clave: menús infantiles, calidad nutricional, entorno alimentario, KIMEHS.

Received: 20 oct, 2025 | **Corrected:** 14 apr, 2026 | **Accepted:** 25 may, 2026

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Doi: https://doi.org/10.15517/zw5de480
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1. Introduction

It is well known that an unhealthy food environment contributes to a lower diet quality, and it has been associated with the detriment of nutritional status and health in general (Duran et al., 2021; Pérez-Ferrer et al., 2019; Turner et al., 2020). Different settings such as schools or their surroundings, shopping malls, entertainment centers, markets, among many others, have become environments of food supply and consumption, with the potential of influencing children's diets (Young et al., 2019).

Foods consumed away from home contribute to an increasing proportion of total dietary intake in many countries, as more people eat outside the home or order and consume ready-to-eat foods (Landais et al., 2023; Seguin et al., 2016). This shift might play an important role in diet quality, especially since eating away from home has been associated with the consumption of larger portions, higher intakes of energy, total fats, sugar and sodium and lower intakes of fiber, dairy, fruits and vegetables (French et al., 2001; Gesteiro et al., 2022).

Regarding eating in restaurants, many establishments usually offer children's menus, which are typically a combination of food and beverage preparations designed for this target audience (Krukowski et al., 2011). Despite this targeted approach, the availability of healthy options on these menus is limited. Several studies have identified this problem in a variety of international contexts, including Australia (Trapp et al., 2022), Canada, the US (Mueller et al., 2019) the UK and Ireland (Young et al., 2019), as well as Portugal, Hungary, and Croatia (Rocha & Viegas, 2020).

In Latin America, only a few countries have assessed the quality of children's menus, specifically Brazil (Silva et al., 2021), Chile (Viegas et al., 2022), Mexico (Palos Lucio et al., 2020) and Guatemala (Mazariegos et al., 2016). This lack of information regarding the availability and nutritional quality of children's menus, hinders the ability to design and implement strategies to regulate and improve the away-from-home food environment at the country level. Therefore, the aim of this study was to characterize foods offered by children's menus of chain restaurants in Costa Rica and to determine whether differences exist in the nutrition quality between fast-food and traditional restaurants.

2. Theoretical reference

Homegardens are mixed cropping systems that can provide a supplementary source of food and income to families (Galhena et al., 2013). The homegarden is the area near the house, which is used to produce food crops (tubers and roots, vegetables, fruits, medicinal plants, condiments, herbs, and others) as well as livestock; usually smaller animals (birds, rabbits, pigs and goats) intended for family feeding (Food and Agriculture Organization of the United Nations [FAO], 2000; Thamilini et al., 2019). As an agrobiodiversity system (Williams et al., 2018), the homegarden offers direct access to a variety of foods and nutrients (Issahaku et al., 2023) and contributes to the FNS, providing also a safety net for food shortages (Baliki et al., 2023; Oduor et al., 2019) like the ones during the

ISSN-1659-0201
http://ccp.ucr.ac.cr/revista/

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COVID-19 pandemic due to movement restrictions (Cerda et al., 2022), which had a strong impact on areas with economies highly dependent on tourism, such as Monteverde.

Different instruments have been developed and used to evaluate the quality of restaurant menus, including the Menu Checklist (Cassady et al., 2004), NEMS-R (Saelens et al., 2007), CMAT (Krukowski et al., 2011), MAST (Pulker et al., 2023) and KIMEHS (Rocha & Viegas, 2020). The following section presents a brief description of each of these instruments.

The Menu Checklist: this tool was developed in the United States in 2004, with the aim of assessing cues for healthy choices in restaurants. It is a reliable and low cost method developed to be used by community members to evaluate influences on food choices in restaurants (Cassady et al., 2004).

Nutrition Environment Measure Study in Restaurants (NEMS-R): this tool includes the assessment of healthy eating facilitators, such as providing nutritional information, labelling of healthier dishes, offering portions of reduced size, promoting healthy menu changes (substitution of French fries for vegetables) and salad bar availability. In addition, it assesses barriers to healthy choices, such as encouraging larger portions, or not allowing special orders. The final calculation is performed including both quantitative (calories and saturated fat) and qualitative (fruit without added sugar, wholegrain cereals) (Saelens et al., 2007).

Children's Menu Assessment Tool (CMAT): this is an expansion of NEMS-R, considering additional information targeted to children's menus. It includes 29 components, 21 about the menu and eight related to the restaurant. This scale and the NEMS- R use US standards, i.e., the Dietary Guidelines for the Population US from 2010 and the Department of Agriculture as a reference (Krukowski et al., 2011).

Menu Assessment Scoring Tool (MAST): the tool was developed in Australia, and it is designed to objectively assess nutritional quality of food service menus. The Australian Guide to Healthy Eating was used as a reference when developing the instrument (Pulker et al., 2023).

In 2020, the Kids Menu Healthy Score (KIMEHS) was developed in Portugal (Rocha & Viegas, 2020), and one of the advantages is that it evaluates the quality of a children's menu, using information available on restaurant websites or on the menu cards (i.e. without the need to analyze portions or quantities served). KIMEHS has since been used in a multicentric study assessing children's menus (Viegas et al., 2022) as well as in Australia (Trapp et al., 2022), and it is the instrument selected for use in the present study.

3. Methods

3.1 Study Design

In this cross-sectional study, we assessed the nutritional quality of children's menus in fast food and traditional restaurants within the GMA of Costa Rica, after adapting the Kids Menu Healthy

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Score (KIMEHS). After evaluating its inter-observer reliability, the tool was applied to evaluate menu offerings.

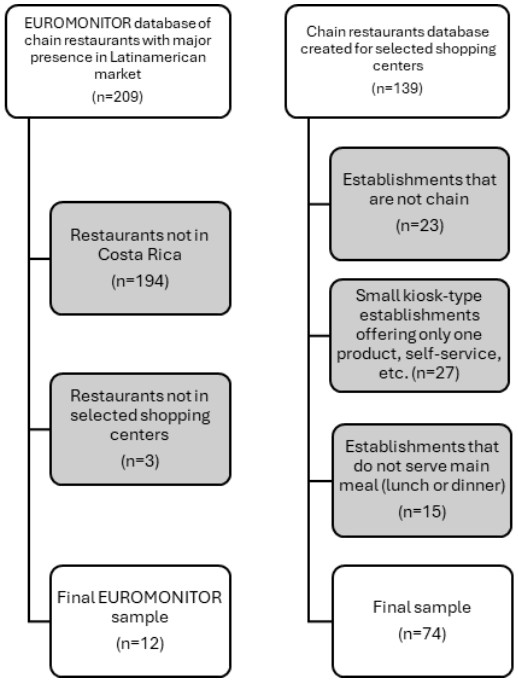
3.2 Setting and Sample

We included major chain restaurants located in the GMR of Costa Rica, a geographic area where the highest density of population resides. We initially identified relevant chain restaurants (n=209) using data from Euromonitor International (2023), which provided information for the Latin America region but not specifically for Costa Rica. Thus, many of the identified chains were not present in the country (n=194).

Given that most restaurant chains are located within shopping centers (i.e. malls), we adopted the following approach to refine our sample: (1) Identification of ten prominent shopping centers in the GMA selected at the discretion of the research team. This approach was warranted because there was no public list available of all shopping centers in the GMA. (2) Identification of all businesses that appeared to sell foods (n=139). For this, we reviewed the internal directories on the main web page of each shopping center. (3) Exclusion of establishments that (i) were not a chain (n=23), (ii) offered only one product (n=27), and (iii) did not serve lunch or dinner (n=15). Chain restaurants were identified as those that had at least one restaurant in the identified shopping centers and one or more outside of these. Our final sample was comprised of 74 restaurants, 12 of which were also included in the Euromonitor database (Figure 1), due to their Latin American wide presence, as opposed to national.

Figure 1

Study sample selection process



ISSN-1659-0201
http://ccp.ucr.ac.cr/revista/

Doi: https://doi.org/10.15517/zw5de480
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Once chain restaurants were identified, they were classified by type of service. We defined traditional service restaurants as restaurants in which customers sit at a table, and are assisted by staff who take their order; whereas fast food restaurants included restaurants in which customers usually order items and pay before eating, thus prioritizing speed and efficiency (Jia et al., 2021; Mercado, 2020). Table 1 displays the list of restaurants included in our study sample.

Table 1

Restaurant chains included in the study, by type of restaurant and service

Type of restaurant	Type of service	
	Fast Food (n=40)	Traditional (n=34)
American	Hooligans Hooters	Brunos – Dukes TGIFridays
Argentinan	Carbón y Sabor Señor Parrilla	El Novillo Alegre La Parrillada Argentina
Asian	Fortuna Korea -Tsunami Sushi Sushi Panda	Kimchis – Matsuri Orient King - Satay Palacio del dragón PF Changs - Teriyaki
Burgers	Burger King – Carl's Junior Chilli's* - Hamburger Factory Johnny Rocket*- Mc Donalds Rocket Burger- Smash Burger Sublime - Taqueria Los Pira	
Chicken	KFC - Roasted Chicken Royal Wings	Rostipollos
Coffee shop	Oui Oui La Crepe	Bread House - Giacomin Spoon - Le petit chez Christophe
Costa Rican	Ta Bueno	A lo tico - Casero El tenedor rojo - Las cervanteñas Las delicias
Italian/Pizza	Dominos - Piccola Italia Pitza by me - Pizza Hut*	Artisan - La Fabricca Mía Italia
Mexican	Bespoke Burrito – Calaveritas* Taco Azteca - Taco Bell	Alebrijes y kalakas - El Fogoncito

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Type of restaurant	Type of service	
	Fast Food (n=40)	Traditional (n=34)
		La Fonda Azteca - Los Antojitos
Sandwiches	Cosi – Hungry Quiznos – Subway	
Other	3 croquetas - La Oliva verde Patacón MIX - Salad's Paradise Pupusas Tazumal	Sangría - Taj Mahal Tintos y blancos

3.3 Instrument Development

The original KIMEHS was developed by Rocha and Viegas (2020), and it is based on the dietary recommendations of the Mediterranean pattern. It assesses 18 components divided into 7 main groups: protein sources, side dishes, vegetables, dessert, beverages, allergen information, and nutritional information.

Each component is individually assessed and assigned a score between -2 and +2; resulting in a total score that ranges between -17 and +17, with a lower score reflecting lower menu quality. After scoring the menus, they can be classified into one of five groups according to their score: unhealthy (-17 to 0.5), moderately unhealthy (0.5-5.5), going healthy (5.5-11.5), moderately healthy (11.5 to 13.5), and healthy (13.5 to 17).

For this study, components of KIMEHS were translated to Spanish, and slight modifications were made to components to adapt to the Costa Rican context, while maintaining the scoring system. The item that in the original KIMEHS assessed "fried potatoes", in the Costa Rican instrument it was modified to "starchy fried vegetables", to include foods such as fried yucca or fried. Additionally, other protein sources such as egg or dairy products were also assessed (and not in the original KIMEHS), although no points were provided to these. We consider that the adaptations were aligned with the Costa Rican Dietary Guidelines.

The items of the KIMEHS were included in a broader survey instrument (available upon request) that was developed to collect data, and survey instructions (i.e. observation protocol) specified step-by-step approaches for proper completion of each section of the instrument: (i) general restaurant characteristics, (ii) children's menu characteristics and (iii) KIMEHS components. This instrument was pilot tested in six menus that were not included in the study sample. The results were reviewed and discussed by the research team, and minor adjustments were made to ensure instrument clarity.

3.4 Data Collection

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In October 2023, the menus of all 74 restaurants included in the study sample were collected and stored. Most menus were available digitally (n=72, 97%), and obtained through restaurant websites, social media accounts, restaurant apps, or digital requests. The remaining two menus were collected through in-person visits to the restaurants. This study did not involve human participants and therefore review by an ethics committee was considered exempt.

3.5 Inter-rater reliability

Two independent coders assessed components of the KIMEHS (section III of survey instrument), for all restaurants that offered a children's menu (n=31). Cohen's Kappa coefficient was calculated for each item in the instrument to determine inter-rater reliability, with the use of Stata 16 (StataCorp, s. f.).

3.6 Data Analysis

All data was entered into a spreadsheet in Microsoft Excel 365®, and descriptive statistics were used to characterize the total sample (n=74) using STATA 16.0 software. Absolute and relative frequencies were calculated by type of restaurant service (fast food vs. traditional). A chi-square test of independence was used to assess the association between the type of service and availability of children's menus. For restaurants offering a children's menu (n=31), the absolute and relative frequency of each KIMEHS component was assessed. The KIMEHS score was then calculated for each restaurant based on the scoring system, and the median and interquartile range by type of restaurant service was determined. The Mann-Whitney test was used to determine whether differences existed in the nutrition quality according to KIMEHS between fast-food and traditional restaurants, at a significance of $P < 0{\cdot}05$.

4. Results

4.1 Sample characteristics

The total sample of chain restaurants included 54% (n=40) fast food restaurants and 46% (n=34) traditional service restaurants (Table 2). The most frequent types of restaurants, according to cuisine types, were Asian (14%) and Burgers (14%), followed by Costa Rican (11%) and Mexican (11%). More than a third (39%) of the chain restaurants have operated in the country for 15 years or more, while 22% were newer chains with less than 5 years of presence.

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Table 2

Sample characteristics according to restaurant service type (n=74)

Characteristic	Type of Service				Total (n=74)	
	Fast Food (n=40)		Traditional (n=34)			
	n	%	n	%	n	%
Type of restaurant						
Asian	3	7.5%	7	20.6%	10	13.5%
Burgers	10	25.0%	0	0.0%	10	13.5%
Mexican	4	10.0%	4	11.8%	8	10.8%
Costa Rican	2	5.0%	5	14.7%	7	9.5%
Italian/Pizza	4	10.0%	3	8.8%	7	9.5%
Other	4	10.0%	3	8.8%	7	9.5%
Coffee type	1	2.5%	4	11.8%	5	6.8%
American	2	5.0%	3	8.8%	5	6.8%
Sandwich	4	10.0%	0	0.0%	4	5.4%
Argentinean	2	5.0%	2	5.9%	4	5.4%
Chicken	3	7.5%	1	2.9%	4	5.4%
Seafood	1	2.5%	2	5.9%	3	4.1%
Years in business[1]						
< 5 years	10	25.0%	6	17.6%	16	21.6%
5 to < 10 years	7	17.5%	8	23.5%	15	20.3%
10 to < 15 years	8	20.0%	6	17.6%	14	18.9%
≥ 15 years	15	37.5%	14	41.2%	29	39.2%
Information source						
Main Website	13	32.5%	18	52.9%	31	41.9%
Social Media[2]	19	47.5%	12	35.3%	31	41.9%
WhatsApp®	3	7.5%	3	8.8%	6	8.1%
Other App	4	10.0%	0	0.0%	4	5.4%
Local (in person)	1	2.5%	1	2.9%	2	2.7%

[1] Refers to year of chain establishment in the country. [2] Includes Facebook and Instagram.

We primarily consulted menus through the restaurant's main website, as well as social media accounts (i.e. Facebook® and Instagram®). Other sources of information were WhatsApp®, the restaurant's online ordering application, or direct in-person visits. Overall, 41.9% (n=31) of restaurants offered a children's menu. When comparing by service type, 37.5% of the fast-food restaurants had a children's menu, compared to 47.1% of traditional restaurants. This difference was not statistically significant (X^2=0.69; p=0.41).

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4.2 Inter-rater reliability of the KIMEHS

The table 3 presents Cohen's Kappa and percent agreement for all KIMEHS items of the assessment for inter-rater reliability. The Kappa value was rated as strong (0.80 and 1.00) for 8 of the 18 items, while it was moderate (0.60-0.79) for 6 items (McHugh, 2012). Two items presented a Kappa coefficient that would indicate weak reliability (0.40-0.59), while the remaining two items had minimal or null reliability (less than 0.40). Both coders met and discussed discrepancies, which were in most cases due to interpretating items slightly differently.

Table 3

Inter-observer reliability of KIMEHS components, as assessed by two independent raters (n=31)

KIMEHS Component	Kappa Coefficient	% Agreement
Soup	1.00	100.0
Red meat	1.00	100.0
White meat	1.00	100.0
Fried fish	1.00	100.0
Other side dish	1.00	100.0
Sweet dessert	0.92	96.8
Fish	0.91	96.8
Legumes	0.89	96.8
Non-starchy vegetables	0.79	93.6
Processed red meat	0.77	90.3
Processed or fried white meat	0.76	93.6
Fruit	0.71	93.6
Fried red meat	0.65	83.9
Allergen information	0.64	93.6
Nutrition information	0.53	90.3
French fries	0.46	83.9
Water	0.21	80.7
Sugary drink	0.05	48.4

4.3 Nutritional quality of children's menus

According to the KIMEHS scores obtained, 96.7% (n=30/31) of the restaurants offering children's menus were classified as "unhealthy", and only one restaurant was considered moderately unhealthy (score = 2.0). The median KIMEHS score of the total sample was -8.5 (P25=-10.0; P75=-5.0). When comparing scores by type of service, fast food restaurants obtained a median of -9.0 (P25= -10.5; P75= -6.0), while the traditional service menus had a median score of -6.5 (P25= -9.0; p75= -4.50; however, this difference was not statistically significant (p=0.09).

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http://ccp.ucr.ac.cr/revista/

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The table 4 presents the absolute and relative data for the presence of the different elements of each KIMEHS component, while Figure 2 complements this information by presenting the most frequently offered main dishes and side dishes. White meat was the most frequent protein source (87.1%) offered in the children´s menus. It was commonly prepared in fried and/or processed form (83.9%), with chicken fingers or nuggets being the most frequent option. The second most common protein source was red meat, which was found in 48.4% of the menus, also typically prepared in fried or processed form.

Table 4

Distribution of KIMEHS components according to restaurant service type (n=31)

Component of KIMEHS	Type of Service				Total (n=31)	
	Fast Food (n=15)		Traditional (n=16)			
	n	%	n	%	n	%
Protein source						
White meat	13	86.7%	14	87.5%	27	87.1%
Fried or processed white meat	12	80.0%	14	87.5%	26	83.9%
Red meat	10	66.7%	5	31.3%	15	48.4%
Fried red meat	7	46.7%	4	25.0%	11	35.5%
Processed red meat	6	40.0%	4	25.0%	10	32.3%
Fish	0	0.0%	8	50.0%	8	25.8%
Fried fish	0	0.0%	7	43.8%	7	22.6%
Legume	1	6.7%	5	31.3%	6	19.4%
Other[1]	0	0.0%	0	0.0%	0	0.0%
Side dish						
Other[2]	14	93.3%	13	81.3%	27	87.1%
French fries[3]	15	100.0%	11	68.8%	26	83.9%
Vegetables						
Non-starchy vegetables	2	13.3%	3	18.8%	5	16.1%
Soup	0	0.0%	0	0.0%	0	0.0%
Dessert						
Sweet treat	3	20.0%	5	31.3%	8	25.8%
Fruit	3	20.0%	1	6.3%	4	12.9%
Drink						
Undefined[4]	6	40.0%	10	62.5%	16	51.6%
Sugary drink	9	37.5%	6	60.0%	15	48.4%
Water	2	13.3%	1	6.3%	3	9.7%
Nutrition information	4	26.7%	1	6.3%	5	16.1%
Allergen information	3	20.0%	1	6.3%	4	12.9%

[1] Refers to other sources of high biological value protein (egg and dairy) [2] Other starchy side (rice, pasta, bread, non-fried starchy vegetables) [3] Or any other fried starchy [4] Restaurants that omitted or did not mention beverage.

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Doi: https://doi.org/10.15517/zw5de480
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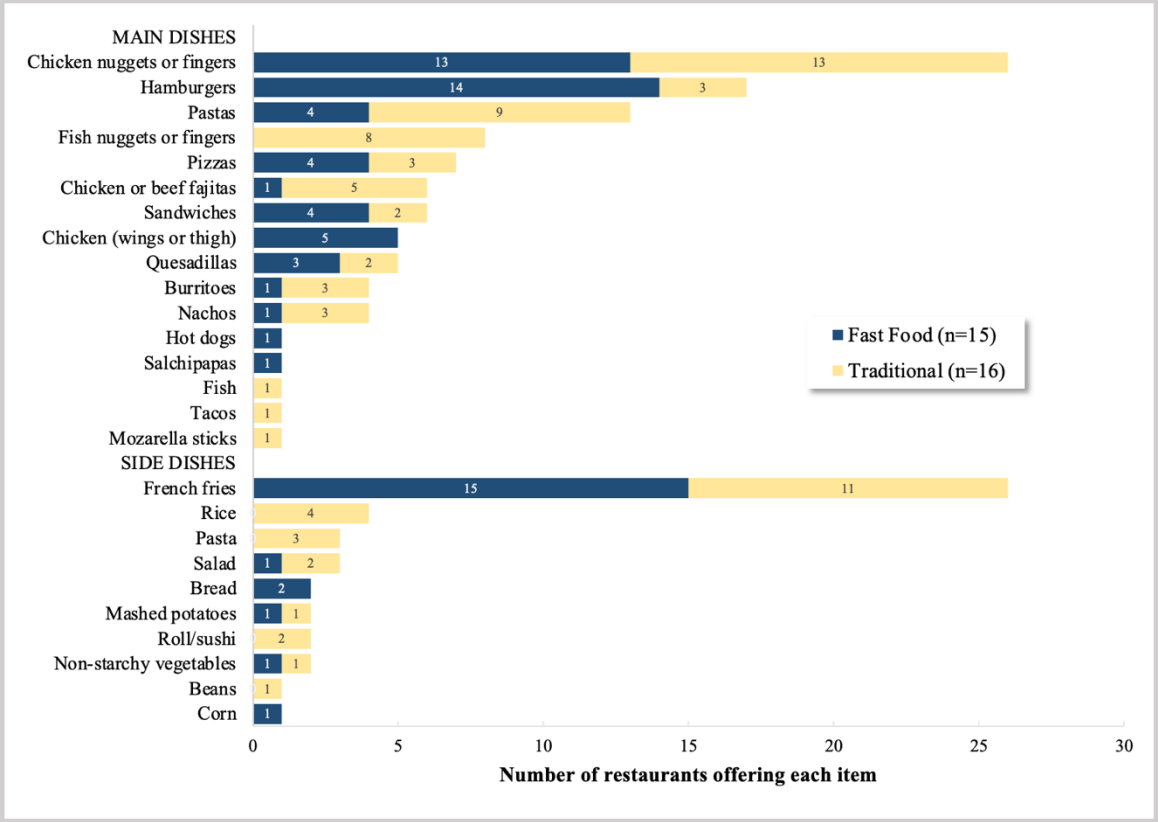
Figure 2

Number of restaurants offering each food item as main or side dish



For the side dishes, French fries predominated in 83.9%, being offered in all fast-food restaurants and in more than two-thirds (68.8%) of traditional restaurants. Other side dishes included pasta, rice, and bread. On the other hand, the availability of other vegetables was very limited, with only five restaurants including them in their menus as a side as a fresh salad (n=3) or steamed or sautéed (n=2). For desserts, only one traditional restaurant offered fresh fruit. For drinks, about half of the restaurants (51.6%) did not define the type of drink included. The remaining restaurants offered predominantly sweetened drinks, such as iced tea and *fresco* (traditional Costa Rican drink made with fruit, sugar and water).

Very few restaurants displayed nutritional information (n=5) or allergen information (n=4) on their menu options. This was presented as complete nutritional labeling or solely energy content, with statements or by means of symbology. It is important to note that this information is not required by law to be included.

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http://ccp.ucr.ac.cr/revista/

Doi: https://doi.org/10.15517/zw5de480
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5. Discussion

This study examined the availability and nutritional quality of children's menus in chain restaurants of the GMA of Costa Rica and assessed whether differences existed between fast-food and traditional service restaurants. Almost half of the chain restaurants evaluated offered a children's menu, and most of the menus were categorized as unhealthy. Although some differences were observed in the menu offerings between the types of restaurants, no statistically significant differences were found in the assigned scores.

Likewise, the results of this study are similar to findings in other contexts using KIMEHS. In a multicentric study involving menus from five different countries (Viegas et al., 2022), the overall median KIMEHS score was -6.4, while in our sample it was slightly lower (-8.5). The median score for Costa Rican restaurants was slightly higher than Hungary (-9.0), but lower than the scores reported for Croatia (-7.5), Chile (-7.5), Portugal (-5.5) and Brazil (-5.0) (Viegas et al., 2022). Similarly, a study conducted in Australia obtained a mean KIMEHS score of -8.5 (median not reported) (Trapp et al., 2022).

In general terms, our results demonstrate that children's menus were of low nutritional quality regardless of the type of service, the type of restaurant, and the number of options offered. Furthermore, there were no significant differences between the nutritional quality of the menus offered by fast-food service restaurants compared to traditional service. The menus of both types of restaurants were characterized by protein sources with high content of total fats and saturated fats, prepared with predominantly unhealthy cooking techniques such as deep frying, and they were highly processed. Side dishes were predominantly energy-dense foods including french fries, pasta, rice, and bread, while fresh fruit, legumes and vegetables were rarely offered. Additionally, desserts and beverages were sources of added sugar. Children's menus also lacked water options in their offerings and did not provide sufficient nutritional and allergen information.

Studies conducted in similar contexts but using different methodologies have found similar results. For example, one Brazilian study assessed children's menus using information available on restaurant websites as well as on food sales mobile applications. The study found that most of the options offered to children were of poor nutritional quality, with low offer of vegetables, fruits and the traditional beans and rice (Venzke et al., 2023).

When considering the proportion of restaurants with a menu considered "unhealthy", nearly all menus in our sample were classified as such (96.7%). As stated by Rocha and Viegas (2020) in their original article on the KIMEHS, carried out in Portugal, they also obtained a high percentage of unhealthy menus (91%), while in Australia, this percentage was even higher (99%) (Trapp et al., 2022). The fact that the KIMEHS classified almost all the restaurants as "unhealthy" could be indicative of the poor nutritional quality of the menus evaluated. However, it could also be related

ISSN-1659-0201
http://ccp.ucr.ac.cr/revista/

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to the sensitivity of the instrument (i.e. how well it can discern between restaurants with healthier options).

Our study suggests that families might face an "illusion of choice" when selecting food options for children. There is a widespread perception that fast food chains offer unhealthy choices (Kellershohn et al., 2021). However, despite not being formally classified as fast food, many establishments offer children's menus with similar nutritional characteristics, evidenced by the high availability of products such as nuggets and French fries (83.9%). Therefore, in practice, the food environment presents a homogeneity in unhealthy supply, limiting the actual ability of caregivers to make more favorable decisions.

Given the contrast between the lowest and highest scoring restaurants, it can be inferred that KIMEHS was able to detect certain healthy components of the menus. However, to classify a menu as "healthy" it would have to meet a series of criteria that are unusual in the context of the chain restaurants that were studied. For example, the inclusion of water as the main drink and fruit as dessert, eliminating sources of added sugar; the inclusion of protein sources such as fish and legumes in their menu and the use of other healthier forms of cooking, avoiding fried foods, as well as providing healthier side dishes such as non-starchy vegetables, and the clear inclusion of allergenic and nutritional information.

When adapting the KIMEHS to the Costa Rican context, adjustments were made to the original instrument and to the way the items were interpreted, after translating the instrument to Spanish. Regarding the inter-observer reliability of the instrument, which was assessed via Cohen's Kappa coefficient, as shown in the results, the initial assessment showed low reliability for some items (McHugh, 2012). This highlighted the need for developing detailed written instructions for using the instrument and ensuring reliability in future study applications. Even though the instrument is short and straightforward, some items could be misinterpreted in the absence of such written instructions.

Our findings are relevant in the context the global targets for noncommunicable disease prevention established by the World Health Organization, which prioritize the reduction of unhealthy diets, halting the rise in obesity, and improving food environments (World Health Organization, 2023). In this context, the high prevalence of unhealthy children's menus observed in this study highlights misalignment between public health goals and the available food supply, underscoring the need for policies and practices that promote better nutritional quality of food options for children, when they eat outside the home.

This study has several limitations. First, our sample was limited to chain restaurants located in the GMR of Costa Rica, and therefore restaurants located in other geographic areas, or those chains not located in shopping centers (which was our approach for sampling) were not included. However, our sample did include the top chains according to Euromonitor Latin America data, which would indicate that they represent a large share of the consumer market. Additionally, the shopping centers used to select the sample were selected at the discretion of the research team.

ISSN-1659-0201
http://ccp.ucr.ac.cr/revista/

Doi: https://doi.org/10.15517/zw5de480
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Second, with the rise of social networks, many of the restaurants have eliminated or stopped updating their web pages. This could have resulted in incomplete and outdated menus with gaps and limited descriptions of the components or omission of items included in the offer, which often seemed to be an aspect of menu design and/or marketing strategy to optimize information and advertising space. Third, the assessment tool was developed in a different context and dietary pattern, so it required adaptation. Finally, no portion sizes were recorded, and no detailed nutritional information was collected on the preparations, which could provide additional information on the nutritional quality of the menu. However, this was not a requirement for the application of the KIMEHS instrument.

Despite these limitations, this is the first study to our knowledge to assess children's menus in Costa Rica, and the second one in the Central American region. The findings could serve as baseline data, if an initiative to promote healthier menus was developed within the restaurant sector of the country. Findings can also be used in educational efforts geared towards promoting healthier choices for parents and caregivers of young children.

6. Conclusion

This study found no significant difference in the nutritional quality of children's menus between traditional and fast-food restaurants. The children's menus offered had poor nutritional quality, with limited variety and availability of healthy options. There is a need for policies and practices that promote better nutritional quality of food options for children when they eat outside the home.

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ISSN-1659-0201
http://ccp.ucr.ac.cr/revista/

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Población y Salud en Mesoamérica
Doi: https://doi.org/10.15517/zw5de480
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Editorial colaboración especial

Escuela de Nutrición: 45 años de aportar al desarrollo de la nutrición en Costa Rica

La Escuela de Nutrición de la Universidad de Costa Rica celebra 45 años de existencia, periodo en el que se registran importantes contribuciones al desarrollo de la nutrición en el país. Su aporte en la formación de profesionales, investigación y acción social se enriquece con la interrelación de saberes, la innovación y la proyección universitaria.

La carrera abre sus puertas en 1980, y se adscribe a la Facultad de Medicina. La investigación ha sido diversa por parte del personal académico y estudiantes, constituyéndose en un eje transversal en el currículum.

Entre 1980 y 1990 el estudio se enfocó en el abordaje de la nutrición materno infantil, políticas y programas nacionales en alimentación y nutrición e intervenciones nutricionales en comunidad, educación alimentaria y nutricional, análisis de la composición nutricional de alimentos, metodologías para la evaluación del consumo de alimentos, entre otros temas relevantes.

A partir de 1990, el trabajo se amplía en el abordaje de otras etapas de vida, enfermedades crónicas no transmisibles, seguridad alimentaria y nutricional, entre otras temáticas, en respuesta a nuevas realidades y necesidades sociales e institucionales.

En el año 2023 se actualizaron las líneas de investigación y acción social, en congruencia con la agenda nacional y universitaria, con el objetivo de priorizar el trabajo y facilitar la integración de grupos académicos, así como la participación en comisiones universitarias, nacionales y redes académicas para el intercambio académico, la difusión científica y la divulgación.

Desde el 2016, se cuenta con la acreditación por el Sistema Nacional de Acreditación, SINAES, y al 2025 ratifica su compromiso con la gestión de la calidad, con el fin de continuar brindando el apoyo a las transformaciones que la sociedad requiere en pro del bien común y el desarrollo humano, donde la nutrición es un pilar fundamental, y en congruencia con los propósitos de la UCR como universidad pública.

Para celebrar el 45 aniversario, se presenta esta edición especial de la revista que reúne varios trabajos académicos que son muestra de la generación de nuevo conocimiento en la comprensión de temas de nutrición de especial relevancia en el ámbito nacional e internacional. Los artículos incluidos en este número pasaron por el proceso normal de evaluación: una revisión preliminar a cargo del comité editorial de la revista, seguida por la verificación, por parte del comité conformado para esta sección, de que los documentos cumplieran rigurosamente con las normas editoriales; finalmente, cada contribución fue sometida a la selección y dictamen de pares externos en el marco del proceso de revisión por pares a doble ciego.

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Doi: https://doi.org/10.15517/zw5de480
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ISSN-1659-0201
http://ccp.ucr.ac.cr/revista/