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Popular Restaurants as strategies to fight hunger and to promote Food and Nutrition Security: an integrative review of scientific publications in the period 2011-2021

Restaurantes Populares como estratégias de combate à fome e de promoção da Segurança Alimentar e Nutricional: uma revisão integrativa de publicações científicas no período de 2011-2021

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ABSTRACT

Objective

Evaluate the contribution of Popular Restaurants in promoting Food and Nutrition Security and fighting hunger.

Methods

This is an integrative review with searches performed in Scopus, Virtual Health Library, Directory of Open Access Journals, Scientific Electronic Library Online, Web of Science, PubMed and Google Scholar databases. The capture of studies was limited to the period from 2011 to 2021. The articles were categorized according to the focus of the evaluation carried out, conceptualization and thematic analysis procedures, and aggregated into five categories of analysis: 1) users' profile; 2) food handlers; 3) leftovers, food loss and waste; 4) physical-functional structure; and 5) promotion of the human right to adequate food.

Results

35 articles were included. There was a predominance of a quantitative approach and, among the focus of the studies, the most recurrent was related to the "users' profile" (54%), followed by the categories: "food handlers" (14%), "Leftovers, food loss and waste" (14%), "promotion of the Human Right to Adequate Food" (12%), and "physical-functional structure" (6%). 88.5% of the studies discuss the equipment in a sectorized way, evaluating specific items of the equipment and/or the population served. Only four studies discussed Popular Restaurants as promoters of the Human Right to Adequate Food.

Conclusion

There was a scarcity of the analyzed literature, attesting to the existing gap in the role of Popular Restaurants in the promotion of Food and Nutrition Security. It is recommended to carry out evaluative studies that can contribute to the qualification and expansion of Popular Restaurants as instruments to promote the Human Right to Adequate Food and fight hunger.

Keywords: Food security. Human right to adequate food. Public policy.

RESUMO

Objetivo

Avaliar a contribuição dos Restaurantes Populares na promoção da Segurança Alimentar e Nutricional e combate à fome.

Métodos

Trata-se de revisão integrativa com buscas nas bases de dados Scopus, Biblioteca Virtual em Saúde, Directory of Open Access Journals, Scientific Electronic Library Online, Web of Science, PubMed e Google Acadêmico. A captura de estudos limitou-se ao período entre 2011 e 2021. Os artigos foram categorizados segundo o enfoque da avaliação realizada, conceituação e procedimentos de análise temática e agregados em cinco categorias de análise: 1) perfil dos usuários; 2) manipuladores de alimentos; 3) resíduos, perdas e desperdício; 4) estrutura físico-funcional; e 5) promoção do direito humano à alimentação adequada.

Resultados

Foram incluídos 35 artigos. Observou-se predominância de abordagem quantitativa e, dentre os focos dos estudos, o mais recorrente foi relacionado ao “perfil dos usuários” (54%), seguido pelas categorias: “manipuladores de alimentos” (14%), “resíduos, perdas e desperdício” (14%), “promoção do Direito Humano à Alimentação Adequada” (12%), e “estrutura físico-funcional (6%). 88,5% dos estudos discute o equipamento de forma setorizada, avaliando itens pontuais do mesmo e/ou da população atendida. Apenas quatro estudos discutiram os Restaurantes Populares como promotores do Direito Humano à Alimentação Adequada.

Conclusão

Verificou-se escassez da literatura analisada, atestando a lacuna existente sobre o papel dos Restaurantes Populares na promoção da Segurança Alimentar e Nutricional. Recomenda-se a realização de estudos avaliativos que possam contribuir com a qualificação e a ampliação dos Restaurantes Populares como instrumentos de promoção do Direito Humano à Alimentação Adequada e combate à fome.

Palavras-chave: Segurança alimentar. Direito humano à alimentação adequada. Política pública.

INTRODUCTION

The United Nations Food and Agriculture Organization estimated that, in 2020, 12% of the world's population was in a serious Food Insecurity (FI) situation, that is, they lived in a situation of hunger, without regular and permanent access to food, totaling 928 million people [1].

In Brazil, according to the *II Inquérito Nacional sobre Insegurança Alimentar no Contexto da Pandemia da COVID-19* (Second Survey on Food Insecurity in the Context of the Covid-19 Pandemic in Brazil), carried out between November 2021 and April 2022, 125.2 million people lived without full or continuous access to food, meaning that more than half of the population manifested some degree of FI. Of these, 33.1 million were classified as being in severe FI, that is 14 million Brazilians facing a new situation of hunger in a period of approximately one year when compared with data from the *I Inquérito Nacional sobre Insegurança Alimentar no Contexto da Pandemia da Covid-19* (First Survey on Food Insecurity in the Context of the Covid-19 Pandemic in Brazil) [2].

This FI scenario in the international and Brazilian context makes studies relevant and urgent to analyze government strategies aimed at guaranteeing the Human Right to Adequate Food

(HRAF) and Food and Nutritional Security (FNS) [1-3]. The *Política Nacional de Segurança Alimentar e Nutricional* (PNSAN, National Policy for Food and Nutritional Security) includes *Equipamentos Públicos de Segurança Alimentar e Nutricional* (EPSAN, Public Equipments for Food and Nutrition Security), among which Popular Restaurants (PR) stand out [4]. In government regulations, the PR are intended to guarantee universal access to food for the general population, however, a significant portion of users are the homeless, informal workers and the unemployed. So, with the Covid-19 pandemic, PR became an even more strategic FNS equipment for the most vulnerable public [5,6].

On the international scenario, initiatives similar to PR were implemented in several countries, at different times and contexts. These initiatives have different levels of stability, and in some cases, they form part of the public policies agenda for social protection, while in other situations they occur on an ad hoc basis or with a welfarism characteristic and are non-aligned to other public policies. However, there are similarities between these international initiatives because they are characterized as a government response to social and economic inequalities and because they promote access to food through free or facilitated distribution of meals to socially vulnerable or hungry populations [4,7-9]. Even so, when compared to international experiences, the Brazilian proposal has broader characteristics in the use of this equipment, mainly because it is consecrated as an FNS action, under the focus of carrying out the HRAF. Institutional regulations and the literature on the subject report that the Brazilian PR have as their main objective the production and distribution of ready-to-eat, adequate and healthy meals, at affordable prices for the socially vulnerable population [4,7,8]. Still, they must act in the promotion of HRAF and FNS, using regional products and safe production procedures, with meals offered in appropriate and comfortable places, guaranteeing dignity to their users [4,7,8,10-12].

Considering the pandemic context and its direct effects on the significant increase in hunger and FI in Brazil and the world, it is necessary to develop studies and analyzes that help the population and governments in combating the ills and their consequences. It is important to understand the performance of PR, as a program for access to food, being strategic for the promotion of HRAF and FNS [13,14].

Therefore, this article aimed to evaluate the contribution of PR in promoting FNS and combating hunger based on an integrative review of evaluative studies on PR published in the last ten years.

METHODS

This is an integrative literature review, which is characterized as a specific review method that seeks to summarize the empirical or theoretical literature to provide a more comprehensive understanding of a given phenomenon or problem. For this, it is required that the search strategies, the inclusion and exclusion criteria and the search results are designed with the objective of avoiding incomplete searches and reducing selection bias [15,16].

A systematic search was carried out for studies that evaluated the PR in order to understand the type of study, the objectives, the main methods and indicators used, the results found, and whether the study considered the PR as EPSAN. The review was guided by two starting questions: 1) What are the objectives of the studies that evaluated Popular Restaurants? and 2) What are the indicators and results provided by the assessment of Popular Restaurants?

The search terms used were: “*restaurante popular*”, “*comedores populares*”, “*comedores sociais*”, “*comedores comunitários*”, “*budget restaurants*”, “*economy restaurants*”, “*popular restaurant*” and

“community restaurants”. These were associated with the terms referring to the evaluation, that is, “*avalia**”, “*evalua**” and “assessment”. The search strategies were established according to the specificities of each database. To ensure transparency and enable the reproducibility of the study’s methodological procedures, the specific strategies applied in the different databases are described in Table 1.

Search terms were performed in the title, abstract and keywords of the article. The bibliographical survey was carried out until the 5th of November 2021 and considered only the studies published between 2011 and 2021. The option for this time frame is justified both by guaranteeing the updating of the study for the last ten years and aligning with the historic process of establishing the National Policy for Food and Nutritional Security (decreed in August 2010) [17] and the First National Plan for Food and Nutrition Security (presented in August 2011) [18]. The investigated databases were: Scopus, Virtual Health Library, Directory of Open Access Journals, Scientific Electronic Library Online, Web of Science, PubMed and Google Scholar (Chart 1).

Chart 1 – Systematic search strategies used in the integrative review in the distinct databases searched.

Scopus
“restaurante popular”; “comedores populares”; “comedores sociais”; “comedores comunitários”; “budget restaurants”; “economy restaurants”; “community restaurants” Strategy: (“restaurante popular” OR “popular restaurant” OR “comedores populares” OR “comedores sociais” OR “comedores comunitários” OR “budget restaurants” OR “economy restaurants” OR “community restaurants”) AND (avalia* OR evalua* OR assessment)
Virtual Health Library
“restaurante popular”; “comedores populares”; “comedores sociais”; “comedores comunitários”; “budget restaurants”; “economy restaurants”; “popular restaurant”; “community restaurants” Strategy: (“restaurante popular” OR “comedores populares” OR “comedores sociais” OR “comedores comunitários” OR “budget restaurants” OR “economy restaurants” OR “community restaurant” OR “popular restaurants”) AND (avalia* OR evalua* OR assessment)
Directory of Open Access Journals
“budget restaurants”; “economy restaurants”; “popular restaurant”; “community restaurants” Strategy: “budget restaurants” OR “economy restaurants” OR “popular restaurant” OR “community restaurants”
Scientific Electronic Library Online
“restaurante popular”; “comedores populares”; “comedores sociais”; “comedores comunitários”; “budget restaurants”; “economy restaurants”; “popular restaurant”; “community restaurants” Strategy: restaurante popular OR comedores populares OR comedores sociais OR comedores comunitários OR budget restaurants OR economy restaurants OR “popular restaurant” OR community restaurants.
Web of Science
“restaurante popular”; “comedores populares”; “comedores sociais”; “comedores comunitários”; “budget restaurants”; “economy restaurants”; “popular restaurant”; “community restaurants” Strategy: (“restaurante popular” OR “comedores populares” OR “comedores sociais” OR “comedores comunitários” OR “budget restaurants” OR “economy restaurants” OR “community restaurant” OR “popular restaurants”) AND (avalia* OR evalua* OR assessment)
PubMed
“budget restaurants”; “economy restaurants”; “popular restaurant”; “community restaurants” Strategy: “budget restaurants” OR “economy restaurants” OR “popular restaurant” OR “community restaurants”
Google Scholar
“restaurante popular”; “comedores populares”; “comedores sociais”; “comedores comunitários”; “budget restaurants”; “economy restaurants”; “community restaurants” Strategy: (“restaurante popular” OR “comedores populares” OR “comedores sociais” OR “comedores comunitários” OR “budget restaurants” OR “economy restaurants” OR “community restaurants”) AND (avalia* OR evalua* OR assessment)

Original articles were included (i.e., those studies or sources of primary information published in scientific journals linked to the investigated databases), with no language restriction, which had an abstract and addressed the assessment of PR [19,20]. Theses and dissertations, reviews and studies that had the sole objective of evaluating the nutritional composition of the menu offered in PR were excluded. Literature reviews were excluded because they were considered sources of secondary information, although they were published in journals registered in the databases investigated [19,20]. Theses and dissertations were excluded because they were considered “grey literature” [19-20], and not published in the databases investigated. It should be noted that theses

and dissertations were captured in a specific database – the Brazilian Digital Library of Theses and Dissertations, with the objective of mapping studies and researchers involved with the theme and possible sources of published primary information.

After reading the titles and abstracts, 33 articles of interest were included in the analysis. Subsequently, these articles were read in full, of which five were excluded, totaling 28 selected articles. To incorporate a larger number of studies, the “snowball” technique was performed [21], which consists of analyzing the bibliographic references of the articles selected in the first stage of the review, and the relevant articles were also considered to assist in the search for the theoretical saturation of the theme. After the aforementioned technique, seven more references were included, totaling 35 included studies. Figure 1 shows the flowchart of the selection, inclusion and exclusion process of articles selected in the systematic search.

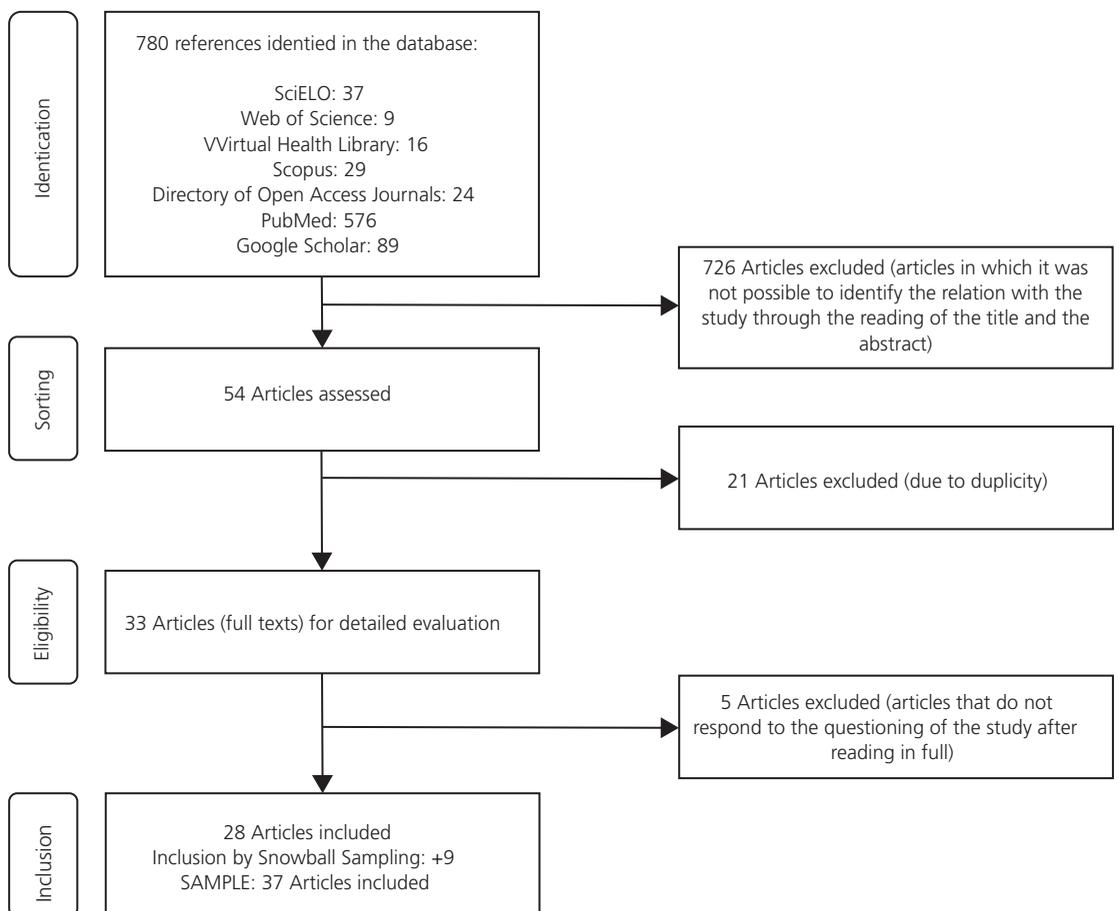


Figure 1 – Stages of the systematic search for articles on evaluation in Popular Restaurants published between 2011 and 2021, included in the integrative review.

For the construction of this integrative review, the procedures and steps recommended by Souza et al. [15] were used. The methodological procedures were performed by two evaluators independently. Disagreements that occurred were resolved by consensus or involving a third evaluator. These procedures occurred according to the following descriptive summary: (a) Initial sorting of titles and abstracts of articles to assess eligibility; (b) When the information available in the titles

and abstracts was not enough, the articles were read in full; (c) To organize the findings, data from the selected articles were extracted using an instrument developed by the authors. For each study, the following was recorded: authorship (authors' names and place of work), title, year, journal, language, country of origin, nature of the study, the object of study, objectives, methods and main results; (d) Data were organized in a Microsoft Excel 2010® (Microsoft Corporation, Washington, USA) document; and (e) A descriptive analysis of the selected studies was performed, seeking to establish an integrative synthesis of the results.

The articles included in the review were categorized according to the focus of the evaluation performed. This categorization occurred according to the conceptualization and procedures of the thematic analysis [22]. A detailed reading of each article was done to identify the main focus of the evaluation and discussion carried out in the PR. Initial themes were listed and, subsequently, the included articles were added to five thematic categories, namely: 1) users' profile; 2) food handlers; 3) leftovers, food loss and waste; 4) physical-functional structure; and 5) promotion of HRAF. It is noteworthy that the subcategory "users' profile" includes objectives related to characterizing the socioeconomic, health, food and nutritional profile of users and FNS, in a combined or isolated way.

RESULTS

The Chart 2 characterizes the 35 selected articles, based on the presentation of the objectives and general methodological aspects of the studies. As for the date of publication, the highest percentage refers to the period 2016-2021: 19 studies (54%). As for the design, the studies were mostly cross-sectional (n=29; 83%).

Chart 2 – List of scientific articles on the evaluation of Popular Restaurants published between 2011 and 2021, included in the integrative review, according to the objectives and general methodological aspects.

1 of 3

Authors	Objective	General methodological aspects
Souza and Corrêa [23]	Determine the index of discarding of vegetables through the survey of the factors of correction of the Popular Restaurant of Várzea Grande-MT.	Cross-sectional study. Data collection on the preparation of vegetables and employee training, as well as the analysis of weights in use, disposal and correction factor of the vegetables surveyed.
Gonçalves et al. [24]	Analyze the Popular Restaurants Program from the Ministry of Social Development and Hunger Combat (MDS) using information on the profile of the program beneficiaries collected in the foodservice units included in the research.	Cross-sectional study. Structured questionnaires, applied to samples of restaurants and users stratified by city, resulting in 600 users interviewed in 19 restaurants in five Brazilian capital cities.
Alves et al. [25]	Characterize the nutritional status, lifestyle, socioeconomic profile and food consumption of commercial workers customers of a social restaurant in Fortaleza-CE.	Cross-sectional study. Sampling happened by convenience, consisting of 156 individuals. The analyzed variables were: weight, height, body mass index, waist circumference, chronic diseases; alcoholism, smoking and physical activity; socioeconomic profile; food consumption. The adequacy of consumption was evaluated based on the Dietary Reference Intakes and nutritional requirements of the Worker's Food Program.
Busato et al. [26]	Evaluate, from the point of view of cleaner production, the quantity and variety of leftovers and food waste at the Popular Restaurant at Chapecó-SC.	Cross-sectional, quantitative study. Data collection of leftovers and rest-intake at lunchtime.
Machado et al. [27]	Evaluate the nutritional status of users of a popular restaurant in Belo Horizonte-MG and possible associations with demographic and socioeconomic profile.	Cross-sectional study. Semi-structured questionnaire and body mass index.
Mello et al. [28]	Assess popular restaurants in the State of Rio de Janeiro, identifying nonconformities that may influence the production process routine of meals and sanitary conditions.	Cross-sectional study. Questionnaire applied in 10 Popular Restaurants located in the State of Rio de Janeiro.
Portella et al. [29]	Identify the profile of the attendants of the Popular Restaurant in Santa Maria-RS.	Cross-sectional study. Questionnaire for characterizing the profile: age, sex, individual income, professional occupation, education and whether they are affected by any disease.
Canonico et al. [30]	Evaluate the rate of rest-intake and waste in the popular restaurant in the city of Maringá-PR.	Cross-sectional study. Calculation of the rest-intake index, the percentage of clean leftovers and food waste.

Chart 2 – List of scientific articles on the evaluation of Popular Restaurants published between 2011 and 2021, included in the integrative review, according to the objectives and general methodological aspects.

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Authors (Year)	Objective	General methodological aspects
Godoy et al. [31]	Characterize users of a government soup-kitchen program and the association with family food insecurity.	Cross-sectional study. Random sample of 1,637 users. Questionnaire with socioeconomic variables, Brazilian Food Insecurity Scale and measured weight and height.
Machado et al. [32]	Assess the nutritional status of users of low-budget restaurants and soup kitchens and to identify factors associated with being overweight in Belo Horizonte-MG.	Cross-sectional study. Questionnaire and anthropometric measurements of 1,334 individuals, from 4 Popular Restaurants.
Sobrinho et al. [33]	Evaluate the condition of household food and nutrition (in)security of the users of low-budget restaurants in Belo Horizonte-MG.	Analytical cross-sectional study carried out in all Popular Restaurants with a sample of 1,613 users. Use of the Brazilian Food Insecurity Scale and socioeconomic profile data of users.
Souza et al. [34]	Analyze the profile of consumers of the Popular Restaurant Dom Ivo Lorscheiter located in Santa Maria-RS.	Cross-sectional study. Application of a structured questionnaire with 165 consumers of Popular Restaurant.
Branquinho et al. [35]	Learn the profiles of diners of Community Restaurants in the Federal District, with the goal of future implementation of strategies that guarantee Food and Nutrition Security.	Cross-sectional study. Questionnaire with socioeconomic, lifestyle and anthropometric data. Collection of data at 6 Popular Restaurants.
Falcão et al. [36]	Analyze the prevalence of perceived food insecurity in households of employees of Popular Restaurants, as well as associate this perception with socioeconomic, labor and health variables.	Cross-sectional study with 273 workers of 7 Popular Restaurants. The assessment of food insecurity was carried out using the Brazilian Food Insecurity Scale.
Macedo et al. [37]	Understand the user profile of the popular restaurant located at Patos-PB, and to evaluate the quality of life and the self-perception of oral health of participants.	Cross-sectional study. Questionnaire application to 397 users.
Araújo et al. [38]	Identify factors related to the Human Right to Adequate Food on the understanding that users have the Program Popular Restaurant.	Field exploratory study, being considered a case study. Data collection was carried out in one of the Popular Restaurant Program units located in the Alecrim neighborhood, in Natal-Rio Grande do Norte. Interviewed 295 users.
Bento et al. [39]	Associate phases of change in the eating behavior of users of Popular Restaurants to sociodemographic aspects, nutritional status and dietary habits in Belo Horizonte-MG.	Analytical descriptive cross-sectional study, conducted with 1,656 users of Popular Restaurants. Structured questionnaires, sociodemographic data collection and stages of change in eating behavior.
Poluha et al. [40]	Evaluate the nutritional value of macro and micronutrients, served during lunch at a Popular Restaurant of Sorocaba-SP and analyze the physical structure of the establishment.	Cross-sectional study. Data collection was performed by weighing food during lunch. For the analysis of the structure, a checklist was used.
Ribeiro et al. [41]	Characterize the socioeconomic profile, nutritional status and prevalence of food insecurity among elderly users of the Popular Restaurant in the Municipality of Santa Cruz-RN.	Cross-sectional study. Structured questionnaire, use of the Brazilian Food Insecurity Scale and anthropometry.
Assunção et al. [42]	Describe the socioeconomic, demographic and eating profile of Popular Restaurant's customers in Juiz de Fora-MG.	Cross-sectional descriptive study. Questionnaires were applied to 266 users.
Albano et al. [43]	Present how the solid waste generated by the Popular Restaurant located in Belo Horizonte-MG, is managed.	Case study in a Popular Restaurant. Quantification and characterization of waste generated by the restaurant, as well as knowledge of the flow of its management.
Gomes et al. [12]	Evaluate the self-rated health among elderly frequenters of low-budget community restaurants in Belo Horizonte-BH and the factors associated with this outcome.	Cross-sectional study carried out in all Popular Restaurants and canteens. Questionnaire application to 279 elderly users.
Oliveira et al. [44]	Evaluate the self-perception of the oral health of the customers of the popular restaurant located in Patos-PB.	Cross-sectional study. Questionnaire with questions addressing socioeconomic variables and oral health. 252 users were evaluated.
Minuzzi et al. [45]	Evaluate the nutritional and socio-demographic profile of users of "Restaurante Popular" in Caxias do Sul-RS.	Cross-sectional study. Anthropometric assessment and application of a questionnaire containing socioeconomic and demographic questions.
Souza et al. [46]	Assess food safety knowledge practices of food handlers in popular public restaurants in Brazil.	Cross-sectional study. Questionnaire was used with 70 food handlers in different cities, with questions related to food safety, self-reported practices and observed practices.
Valones and Silva [47]	Analyze solid waste management in the Popular Restaurant of Pau dos Ferros-RN.	Case study. Visits were carried out in loco, interviews with the restaurant manager, and photographic records of the stages corresponding to the management of the waste.
Botelho et al. [48]	Analyze the consumption of sugar (sucrose) by the Brazilian low-income population.	Cross-sectional and descriptive study. Use of the 24-hour dietary recall and questionnaire to collect sociodemographic and anthropometric data. The sample included 1,232 users of 32 Popular Restaurants.
Costa et al. [11]	Analyze the occurrence and the associated factors with food insecurity and overweight among government-backed economy restaurant workers in one of the biggest cities in Brazil - Belo Horizonte-MG.	Cross-sectional study. Sample consisted of 180 individuals. Use of the Brazilian Food Insecurity Scale, calculation of the body mass index and collection of sociodemographic, occupational and health perception and quality of life data.
Sousa et al. [49]	Characterize the nutritional quality of breakfast consumed by the Brazilian low-income population in Community restaurants in Brazil.	Cross-sectional study with a sample of 1,547 low-income restaurant-goers of 36 restaurants. Food consumption was analyzed by the frequency of food groups presented in the 24-hour recall for three days.

Chart 2 – List of scientific articles on the evaluation of Popular Restaurants published between 2011 and 2021, included in the integrative review, according to the objectives and general methodological aspects.

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Authors	Objective	General methodological aspects
Duarte et al. [50]	Evaluate the frequency and variety of regional foods consumed by Brazilians in the Northeast using a government program.	Exploratory study. Food consumption of low-income community restaurant goers. 753 individuals participated, representing a sampling error of less than 3.5% for national representation. R24h was used in restaurants on two weekdays and one weekend day.
Fideles et al. [51]	Determine the association between nutritional status and the presence of non-communicable chronic diseases among food handlers at Popular Restaurants.	Cross-sectional study. Sample composed of 36 Popular Restaurants from all Brazilian regions, including 559 food handlers. Questionnaire for sociodemographic data, reported diagnosed chronic diseases and anthropometric measurements.
Oliveira et al. [7]	Evaluate government-subsidized restaurants in southern Brazil according to current regulations and the National Food and Nutrition Security Policy.	Normative assessment. Evaluation Matrix composed by the Political-Organizational and Technical-Operational dimensions. 24 indicators were listed, collected through a questionnaire answered by the managers.
Sousa et al. [52]	Evaluate the effectiveness of popular restaurants administered by the Government of the State of Bahia, for the dimension of access to food.	Cross-sectional, descriptive study with secondary data. Public Opinion Survey. Profile of community restaurant users. Nutritional information was accessed by analyzing the menus.
Villas Boas et al. [53]	Evaluate the Brazilian Food Assistance Program at the Community Restaurants regarding the supply of regional dishes, fruits, and vegetables, to reduce the food insecurity of low-income people and to strengthen the sustainability of local food systems.	Cross-sectional study. Questionnaire containing multiple-choice questions about the frequency of regional dishes, fruits and vegetables. Each national region had a specific questionnaire. The second part of the questionnaire contained a list of local fruits and vegetables. The types and frequency at which local fruits and vegetables were sourced and where these items were purchased were collected.
Fideles et al. [54]	Evaluate food insecurity among Brazilian Community restaurant food handlers and its associated factors.	Cross-sectional study. Representative sample of 471 food handlers from all Brazilian regions. Predictors of the participants' socioeconomic status and geographic location related to household food insecurity categories ($p < 0.05$).

The Chart 3 presents the summary of the 35 articles included, according to the type of approach and focus of the study. There was a predominance of a quantitative approach and, among the focus/theme of the studies, the most recurrent was related to the “users’ profile” corresponding to 19 studies (54%), followed by the categories: “food handlers” (14%), “Leftovers, food loss and waste” (14%), “promotion of HRAF” (12%), and “physical-functional structure” (6%).

Chart 3 – Distribution of the 35 articles on evaluation in Popular Restaurants published between 2011 and 2021, included in the integrative review, according to their characteristics (type of approach and study focus).

1 of 2

Authors	Type of Approach		Study Focus				
	Qualitative	Quantitative	Users' Profile	Food Handlers	Leftovers, food loss and waste	Physical-functional structure	HRAF promotion tool
Souza and Corrêa [23]		X			X		
Gonçalves et al. [24]		X	X				
Alves et al. [25]		X	X				
Busato et al. [26]		X			X		
Machado et al. [27]		X	X				
Mello et al. [28]		X				X	
Portella et al. [29]		X	X				
Canonico et al. [30]		X			X		
Godoy et al. [31]		X	X				
Machado et al. [32]		X	X				
Sobrinho et al. [33]		X	X				
Souza et al. [34]		X	X				
Branquinho et al. [35]		X	X				
Falcão et al. [36]		X		X			
Macedo et al. [37]		X	X				
Araújo et al. [38]	X						X
Bento et al. [39]		X	X				

Chart 3 – Distribution of the 35 articles on evaluation in Popular Restaurants published between 2011 and 2021, included in the integrative review, according to their characteristics (type of approach and study focus).

2 of 2

Authors	Type of Approach		Study Focus				
	Qualitative	Quantitative	Users' Profile	Food Handlers	Leftovers, food loss and waste	Physical-functional structure	HRAF promotion tool
Poluha et al. [40]		X				X	
Ribeiro et al. [41]		X	X				
Assunção et al. [42]		X	X				
Albano et al. [43]	X	X			X		
Gomes et al. [12]		X	X				
Oliveira et al. [44]		X	X				
Minuzzi et al. [45]		X	X				
Souza et al. [46]		X		X			
Valones and Silva [47]	X				X		
Botelho et al. [48]		X	X				
Costa et al. [11]		X		X			
Sousa et al. [49]	X	X	X				
Duarte et al. [50]		X	X				
Fideles et al. [51]		X		X			
Oliveira et al. [7]		X					X
Sousa et al. [52]		X					X
Villas Boas et al. [53]		X					X
Fideles et al. [54]		X		X			

Each article was explored according to the methods and/or instruments used, with their categorization and absolute and percentage distribution within each category being made [55,56], as illustrated in Table 1. Some studies used more than one method, so it was not possible to include a line/column table indicating a total.

Table 1 – List of the main methodological procedures used in the articles on evaluation in Popular Restaurants, published between 2011 and 2021, included in the integrative review.

Main methodological procedures and/or instruments used by the studies	n (35)	%
Application of questionnaires to collect demographic, social and economic data, food consumption, health/disease assessment, in a combined or isolated way	26	74
Anthropometric data collection	12	34
Use of the <i>Escala Brasileira de Insegurança Alimentar</i> (Brazilian Food Insecurity Scale)	6	17
Food weighing and/or rest-ingestion technique	5	14
Direct or systematic observation	3	9
Application of checklists related to hygienic-sanitary issues	3	9
Evaluation of the nutritional composition of the menu	2	6
Photographic record of leftovers and food waste	2	6
Questionnaire focused on the management of the Popular Restaurant	2	6
Qualitative semi-structured questionnaire	1	3

As shown in Table 1, the most used methods included collecting data on the profile of users, including information such as anthropometry, health, social, and economic conditions, among others. The use of the *Escala Brasileira de Insegurança Alimentar* (Brazilian Food Insecurity Scale) appears as the third most used method/instrument (17%).

The articles had different methodological characteristics, which allowed them to be categorized into two main strands of studies: 1) those that focused on users (n=19); and 2) others that were concerned with analyzing the structures, processes and results of their own tools (n=16).

Most studies discuss the PR in a sectoral way (n=31), that is, evaluating specific items of this EPSAN and/or the population served. Only a small portion of the studies (n=4) included and discussed PR and their services within the scope of HRAF and FNS promoting tools.

Next, a brief description of the 35 articles analyzed according to the five thematic categories into which they were grouped is presented.

Popular Restaurants users' profile

The 19 studies, whose objective was to outline the profile of users, used analyzes of socioeconomic, sanitary, anthropometric and food indicators, as well as their level of food security [12,24,25,27,29,31-35,37,39,41,42,44,45,48-50]. Most studies identified the following users' profile: men, married, with or without children, with an educational level up to high school, and income mainly between half of the minimum wage and the minimum wage, with variations up to two times the minimum wage [12,24,25,27,31,32,34,35,41,44,45]. Still, five studies identified the prevalence of overweight and obesity in users, with percentages ranging between 42.9% and 53.2% [25,27,32,35,45].

Popular Restaurants food handlers

Five studies evaluated the FI condition of food handlers [11,36,46,51,54] and identified a prevalence between 24% and 54%, although these workers were inserted daily in a program aimed at FNS. The authors signaled that the scope of PR actions should also be extended to its employees and, if possible, beyond the limits of tools [11,36,46,51].

Leftovers, food loss and food waste in Popular Restaurants

The five studies in this group found inadequacies [23,26,30,43,47], such as daily waste exceeding 120 kg of food [23,26]. Still, one of the studies reinforced that with the amount of food wasted in five days of research, it would be possible to serve more 320 meals [30].

Physical-functional structure of Popular Restaurants

The two studies that evaluated the physical structures of the PR found divergent results [28,40].

The study carried out in ten PR in the State of Rio de Janeiro [28] identified that 100% of the PR had adapted and inadequate structures, which could result in lower-quality meals, as well as propagate disease outbreaks. On the other hand, the study carried out in the city of Sorocaba (São Paulo) found adequacy in 96.8% of the structural items evaluated in the PR. The study did not inform whether the construction of this PR was made from an adapted structure or a new building [40].

Popular Restaurants as equipment for promoting Human Right to Adequate Food

Among the 35 studies analyzed, four of them stand out for using as a premise the conception of PR as equipment for promoting HRAF [7,38,52,53], understood as a political, collective and accessible space for all [57].

The study by Araújo et al. [38] sought to identify the users' understanding of PR as a tool for promoting the right to food. Through discourse analysis, the results showed that PR users

identified the meaning of the tool in three categories: aid, quality meals and financial savings. The reasons attributed to the existence of PR were restricted to welfare, with low mention of the State's obligation (mentioned by only 3.68% of users). Some users suggested that the existence of the PR would be a divine intervention, a blessing in their lives [58]. This understanding indicates that the investigated users did not distinguish between politics, philanthropy and religious action, the latter, for many, overlapping with government initiatives [38].

The study by Oliveira et al. [7] investigated PR in the south of Brazil using an evaluative matrix that bases its parameters and value judgment on the regulations governing PR, as well as those that include PR in the PNSAN as an EPSAN. The researchers found satisfactory results in the sub-dimensions related to the structure of the PR as a *Unidade de Alimentação e Nutrição* (Food and Nutrition Unity) mainly regarding the provision of adequate food and the administration of the equipment. Unsatisfactory results were more recurrent in the sub-dimensions that differentiate PR from commercial restaurants and place them as EPSAN, namely *Educação Alimentar e Nutricional* (Food and Nutrition Education) actions and extended user access to other PNSAN actions. Low articulation of the PR evaluated with other FNS actions and programs was found [7].

Sousa et al. [52] evaluated the effectiveness of PR in the State of Bahia for the dimension of access to food. The survey showed that the analyzed PR were effective in serving 53.1% of the target population, that is, just over half were compatible with the program's priority profile. It was defined that the target audience would be individuals who self-declared income per capita of up to half the minimum wage. However, the number of meals served included only 0.7% of the city's low-income population [52].

Villas Boas et al. [53] evaluated the PR based on the dimension of access to regional dishes, typical/cultural fruits and vegetables for the population living with FI. The research included 37 PR from all regions of Brazil and pointed out that none of them offered all the typical preparations listed and that the North region had the lowest frequency when offering these preparations. Some regions provided more typical vegetables than fruits. The management of PR claimed as facilitating factors for the offer of typical and cultural foods the high acceptability and eating habits. However, as a limiting factor, high prices were reported. The study highlighted that the South region was the one that most frequently purchased regional food directly from family farming [53].

DISCUSSION

Regarding the thematic category "profile of PR users", the analysis of the 35 articles included in the integrative review points to a user profile that is inherent and adequate to the target audience established by the institutional regulations of PR [59]. Although this alignment is expected, it should be noted that this public needs specialized attention and proper support and protection measures. In this line, researchers have signaled the need to understand PR as a multifunctional and strategic space for the promotion of Food and Nutrition Education [4,7,11,27,32,33,35,41,42].

It should be pointed out that the affordable price surpasses the factors that interfere with the choice of eating in the PR [32,33] and corroborates with one of the few existing national mappings, carried out almost two decades ago, which reflects the social meaning of the program [60]. For example, a study with PR in Belo Horizonte showed that 47% of users could pay, in another restaurant, a maximum of R\$ 5.00 per meal [33], an insufficient amount in a commercial restaurant [32].

It is noteworthy that three studies identified, on average, a percentage of 40% of users in a situation of FI [31,33,41], a multi-causal and challenging condition for authors and organizers of

public policies [33]. It is important to emphasize that the meal itself in the PR can influence the results found since the program provides an adequate and balanced meal [31]. However, even though the population is assisted by the tool that provides access to food, the PR is not able to reverse the situation of FI, which today affects more than half of the Brazilian population [2]. It reinforces, therefore, the urgency of resuming paths that lead to the strengthening and consolidation of the PNSAN and its programs [4,7].

In turn, two studies focused on evaluating the elderly population that ate in the PR [12,41]. It is thus revealed that this equipment is fundamental not only in guaranteeing FNS but in improving the self-perception of the health of the target public, especially for the socialization and conviviality they provide. That is, it is understood that PR also strengthen the dignity of the act of eating and the civil rights of vulnerable groups [12,41,61].

In relation to the theme “PR food handlers”, the analyzed articles pointed out that these professionals had low education and income, a condition that places them both as actors and as a target population of public policies aimed at guaranteeing FNS, a dichotomous and emblematic situation that needs attention and action [36,51].

Therefore, in relation to the importance of the aforementioned studies, for the PR to fulfill its EPSAN role, it must add dimensions of action that go beyond its potential as a *Unidade de Alimentação e Nutrição*, since it must incorporate principles related to HRAF and promotion of FNS in its priority goals, such as favoring the use of food from family farming, including the offer of food and/or typical and regional preparations, prioritizing access for people in situation of social vulnerability, among others [4,7,17,18,59].

As for the thematic categorization “Leftovers, food loss and waste in PR”, the results of the analyzed studies point to the need for training and supervision of food handlers regarding collecting, pre-preparation and preparation of food. Still, they indicate the need for user awareness actions, as well as a solid waste management plan for these restaurants [26,30,47].

In this context, we highlight that PNSAN has as one of its guidelines, the stimulation of supply and the structuring of sustainable systems from production to distribution [17,18]. Therefore, it is reinforced that food waste is a risk factor for FI and needs to be avoided [62].

It is emphasized that programs that aim to reduce hunger and food waste, such as Food Banks, work with educational actions aimed at conscious consumption, safe handling, and full use of food, among others [63,64]. Therefore, the experience of other tools can be incorporated into the actions of the PR and thus the premise of articulation between the PNSAN programs could be strengthened [4,7,65].

As for the theme “physical-functional structure of the PR”, it is important to highlight that within the multifunctional universe of the PR, the basic premise is to guarantee a dignified place to eat and that provides adequate, balanced, healthy and safe meals at all times and aspects [4,7,8,52]. That is, the need for attention and adequacy is also reinforced regarding the term “food safety” based on the concept of “safe food” [66]. Therefore, researchers highlight the importance of structuring PR based on the Popular Restaurants Implementation Manual [59] as well as national sanitary legislation [4,7,28,40,67].

Regarding the theme “PR as equipment to promote HRAF”, it is reiterated that evaluating the PR as a tool that promotes FNS and HRAF is important, since, currently in Brazil, research aimed at measuring FNS, in general, has used instruments focused on the household and the individual, such as the *Escala Brasileira de Insegurança Alimentar* (Brazilian Food Insecurity Scale) and the

Pesquisa de Orçamentos Familiares (Consumer Expenditure Surveys), in addition to associations with socioeconomic and anthropometric variables. These methodological procedures can reinforce the population's individual responsibility, disregarding the State's responsibility in relation to FNS as an object of human rights. In this way, we emphasize that FNS is related to many services that depend on the State's action, such as sanitation, access to water, health services, and food, among others [68].

It is important that, although the articles included in this review point to evidence favorable to the partial achievement of the PR objectives, it is observed in the literature on this subject that there are reservations about the impacts, effectiveness and efficiency of this equipment. Kraemer et al. [69], for example, question the continuous or permanent nature of PR, without proper assessment/monitoring of their impacts on improving the FNS, socio-economic and living conditions of users. That is, the authors emphasize the importance of meal distribution programs acting on a temporary and/or emergency basis, but that PR must be connected to structuring policies aimed at promoting HRAF and eradicating the determinants of hunger.

Yet on the achievement of the normative objectives of PR, studies published by Araújo et al. [38], Kraemer et al. [69] and Nunes et al. [70] point out important limitations of the evaluation procedures of these tools in relation to the quality and adequacy of the meals served from the perspective of the users themselves. For these authors, the PR evaluation process, in addition to traditional methodological procedures (use of quantitative and objective parameters), must take into account qualitative, subjective and perceptive dimensions of the users' relationship with the offered meals. Therefore, it is necessary to understand PR users from their personal (individual) point of view or their experience with the world, dimensions that are mediated by their socioeconomic position or social class. The evaluation procedures need to include mechanisms that make it possible to identify and comprehend, from the perspective of the users, whether the meal served by the PR is perceived as a favor/benefit from the State or as the State guarantee of a basic right (to adequate and healthy food).

Within the scope of the Brazilian concept of FNS, the evaluation becomes more complex, due to the scope of this concept and because it includes indicators and dimensions inscribed in different spheres of society, such as the right to food, food sovereignty, and equity, among others. Therefore, the evaluation of these public policy tools becomes a sensitive and challenging process [71].

The PR should be considered a public policy based on the principle of universality that seeks to include and serve everyone, but with a priority of reducing hunger and promoting HRAF for the most vulnerable part of the population. Therefore, it is important to implement and expand this equipment [4,7,52,57,72]. A study carried out in 2011 pointed out that, in that year, the amount of PR in Brazil was already insufficient for all the existing demand. According to published data, at the time, the coverage of the program was only 0.22% of the population with FI [24].

The PR present as secondary objectives, but no less important, the respect for the food culture, the provision of seasonal food and the promotion of purchases from family farming [4,7,11,12]. In this direction, a study carried out in Paraná, showed that this program did not act only as a compensatory policy, because when well-structured and with committed management, it could promote the development of the region where the restaurant was located, strengthen family farming through partnerships such as the *Programa de Aquisição de Alimentos* (Food Acquisition Program), leverage cooperativism, encourage agroecological management, preserve regional biodiversity, reduce hunger and poverty, contribute to reaching FNS, and improve the local economy [65]. It should be noted that, as of Decree nº 10,880, instituted on December 2nd, 2021, the purposes of the *Programa*

de Aquisição de Alimentos were transferred or became the responsibility of the *Programa Alimenta Brasil* (Feeding Brazil Program), created with said decree [73].

It is noteworthy that this review showed that studies focused on the profile of users predominate in the literature, with emphasis also on the evaluation of structural aspects and/or factors related to Leftovers, food loss and waste. Although evaluation studies of this equipment have been found from different perspectives, such as an EPSAN; [7,38,52,53] the scarcity of literature is still highlighted, attesting to the existing gap and justifying the relevance of studies on the subject, since they could encourage the qualification and expansion of Brazilian PR in the context of promoting HRAF and FNS and, consequently, combating hunger.

The PR must be understood as a tool that fulfills an inalienable right [8,70] and, even with limiting factors, it is an effective social policy that directly contributes to the fulfillment of an immediate social human need [8,70]. In this context, it is necessary for the users themselves to understand themselves as political subjects, builders of strategies for claiming their rights [68].

It should be noted that the federal government's actions to suppress the effects of Covid-19 were restricted to emergency measures focused on access to income and food, being insufficient to guarantee FNS. These public actions without an intersectoral character and guidance from scientific data can raise social impacts during and after the pandemic [69,71]. Added to this scenario is the context prior to the pandemic, in which the suppression of human rights contributed to the progressive increase in social vulnerabilities, including FI, and thus placing Brazil as the probable epicenter of hunger [72-76].

Thus, the evaluation of programs and policies is essential to understand the limitations, aiming to correct them to improve the functioning and the results achieved [77,78]. And with the significant increase in FI in Brazil and the world, the responsibility for research and studies on hunger and its various associated indicators increases [78].

Despite the metric used to reduce biases, this review has the categorization of results as a limiting factor, since it was carried out according to the characteristics of the studies and the interpretation of the researchers. The option for the chosen time frame of articles published between 2011-2021 can also be considered a limitation of the study, since this type of public policy, the PR, resurfaced in Brazil in the 1990s and expanded after the creation of the Zero Hunger Program, in 2003 [4,7,8,11,12]. In addition, it should be stressed that heterogeneity was observed in data collection and analysis procedures. The comprehensive search with varied keywords and large databases can be highlighted as strengths; the low probability of publication bias, as well as the analysis potential of evaluative PR studies published in the last decade.

CONCLUSION

The analyzed studies showed the multifunctionality of PR through the sectoral analysis of their functions. The articles included in this review point to favorable results regarding the achievement of objectives of PR, however, in the literature on the subject, reports of studies are observed that question the impacts, efficiency, and effectiveness of these tools in promoting FNS and fighting hunger. The relevance and opportunity of PR as an emergency and transitory public policy aimed at fighting hunger were emphasized, however, the users' permanence in the program, without the evaluation of indicators of improvement of their FNS conditions, was pointed out as a negative or limiting aspect. Consequently, the proper functioning of the PR as an EPSAN requires compliance with the premise of its intersectorality with other actions, programs, and structuring policies that promote the FNS and HRAF of its users.

The four studies that included questions and/or discussions about the PNSAN in the analysis of the PR showed that advances are needed in evaluative methodologies that contemplate the FNS framework as a premise for the performance of these tools. Furthermore, the evaluation must be understood as an inherent strategy to the program itself, as a fundamental procedure for qualifying and guaranteeing the achievement of its objectives, and, consequently, greater effectiveness and efficiency.

It is understood that the evaluation and monitoring of PR, based on the observation of impacts, efficiency of actions and coverage of this equipment, could lead to its optimization as a tool for fighting hunger and contribute to better rates of FNS and guaranteeing HRAF.

Finally, it is noteworthy that the studies that prioritized their discussion in PR as equipment that promotes HRAF were published, in the majority, between 2020 and 2021. This information strengthens the importance of PR as a relevant strategy in the current context with a significant increase in all social vulnerabilities, including FI and hunger.

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JTC OLIVEIRA participated in the conception, design, analysis, interpretation of data, and writing the article. CG GABRIEL participated in the conception, design, review, and final approval of the article. ML MACHADO, MC MARTINS, LP BRICARELLO and FAG VASCONCELOS participated in the conception, review, and final approval of the article.