

## NUTRITIONAL STATUS AND FOOD SAFETY OF FAMILIES BENEFITED BY THE *BOLSA FAMILIA* PROGRAM: INTEGRATIVE REVIEW

Estado nutricional e segurança alimentar de famílias beneficiadas pelo Programa Bolsa Família: revisão integrativa

Estado nutricional y seguridad alimentaria de familias beneficiadas por el Programa Bolsa Familia: revisión integrativa

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### SUMMARY

**Objectives:** To synthesize the knowledge produced in the literature about the nutritional status and food security of families benefited by the Bolsa Família Program. **Methods:** Integrative review, with publications from 2004 to 2017, in the databases: Scientific Electronic Library Online, Latin American and Caribbean Health Sciences Literature and Virtual Health Library using the keywords: Nutritional Status; Food safety; Public health; Nutritional policy; Social policy. **Results:** We selected 17 publications that met the inclusion criteria. The Program provided beneficiary families with access to sufficient and quality food. On the other hand, it provided an increase in the consumption of low calorie and nutritious foods, causing nutritional disturbances. **Conclusion:** The Program has brought many benefits, but it is recommended to carry out educational actions aimed at healthy eating and the search for investments in education, health, job and income generation and implementation of policies aimed at social inequality.

**Descriptors:** Nutritional status; Food security; Public health; Nutritional policy; Social policy.

### RESUMO

**Objetivos:** sintetizar o conhecimento produzido na literatura acerca do estado nutricional e a segurança alimentar de famílias beneficiadas pelo Programa Bolsa Família. **Métodos:** Revisão integrativa, com publicações de 2004 a 2017, nas bases de dados: *Scientific Electronic*

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*Library Online*, Literatura Latino-Americana e do Caribe em Ciências da Saúde e Biblioteca Virtual em Saúde utilizando-se os descritores: Estado Nutricional; Segurança Alimentar; Saúde Pública; Política Nutricional; Política Social. **Resultados:** Foram selecionadas 17 publicações que atenderam aos critérios de inclusão. O Programa proporcionou às famílias beneficiadas acesso a alimentos de qualidade e em quantidade suficiente. Em contrapartida, proporcionou o aumento no consumo de alimentos calóricos e de baixo teor nutritivo, ocasionando distúrbios nutricionais. **Conclusão:** O Programa trouxe inúmeros benefícios, mas recomenda-se a realização de ações educativas que visem à alimentação saudável e a busca por investimentos nos setores de educação, saúde, geração de trabalho e renda e implantação de políticas voltadas à desigualdade social. **Descritores:** Estado nutricional; Segurança alimentar; Saúde pública; Política nutricional; Política social.

## RESUMÉN

**Objetivos:** sintetizar los conocimientos producidos en la literatura sobre el estado nutricional y la seguridad alimentaria de las familias beneficiados por el Programa Bolsa Família. **Métodos:** Revisión integrativa, con publicaciones de 2004 a 2017, en las bases de datos: Biblioteca Electrónica Científica En Línea, Literatura Latinoamericana y del Caribe sobre Ciencias de la Salud y Biblioteca Virtual de Salud utilizando los descriptores: Estado Nutricional; Seguridad Alimentaria; Salud Pública; Política Nutricional; Política Social. **Resultados:** Seleccionamos 17 publicaciones que cumplían los criterios de inclusión. El Programa proporcionó a las familias beneficiadas acceso a alimentos de calidad y suficientes. Por otro lado, aumentó el consumo de alimentos calóricos con bajo contenido nutricional, causando trastornos nutricionales. **Conclusión:** El Programa ha traído numerosos beneficios, pero se recomienda llevar a cabo acciones educativas dirigidas a una alimentación saludable y la búsqueda de inversiones en los sectores de la educación, la salud, la generación de trabajo y los ingresos y la implementación de políticas dirigidas a la desigualdad social. **Descriptores:** Estado nutricional; Seguridad alimentaria; Salud pública; Política nutricional; Política social.

## INTRODUCTION

The Bolsa Família Program (PBF) was created by Law No. 10,836 / 2004 and adopted as a public policy of the Federal Government with the objective of providing social inclusion and income redistribution to the neediest Brazilian families. To this end, the State intervened in economic and social issues in the country, in order to act in the transfer of monetary income to the beneficiaries and to provide the population with access to basic citizenship services, such as health and education.<sup>1</sup>

The program aims to guarantee the beneficiary population conditions of food and nutritional security, that is, to ensure that everyone has regular and permanent access to quality food in sufficient quantities without compromising other essential needs. It was observed that after the implementation of the program, food consumption by the poorest families increased by about R \$ 388 per year after receiving the benefit, but there was no evidence of nutritional improvement.<sup>2</sup> Regarding poverty reduction,

there was a 16% reduction in the country's poverty rates, from 1999 to 2009, attributed to the implementation of the PBF.<sup>3</sup>

Although access to food has improved, healthy food consumption has still been limited by job instability and the low income of much of the beneficiary population of this program. Consequently, the food security and nutritional status of these groups, especially children, have been compromised, exposing them to the situation of greater food vulnerability and chronic diseases.<sup>4</sup>

The families benefited from the PBF use an important portion of food aid that mainly affects children. However, it does not mean a reduction in food insecurity or a guarantee of adequate family nutritional status.<sup>5</sup>

Numerous beneficiary families choose to choose industrialized and low nutritional foods (sweets, oils and fats), mainly due to the more affordable cost. Moreover, these choices are influenced not only by accessibility to financial resources, but also by the customs, culture and local knowledge of each group, as well as publicity about these foods. This situation demands the need to create programs aimed at educating the population and showing the importance of a varied and nutrient-rich diet.<sup>6</sup>

To achieve the program objectives, articulations of other intersectoral policy interventions are needed to enable families to use the amount received.<sup>7</sup>

In this context, this study aimed to synthesize the knowledge produced in the literature about the nutritional status and food security of families benefited by the Bolsa Família Program.

## METHODS

It is an integrative literature review.<sup>8</sup> In order to meet the established stages, the guiding question first began: What is the nutritional status and food security of families benefiting from the PBF? The descriptors selected and listed on the Health Sciences Descriptors (DeCS) platform were: Nutritional Status; Food safety; Public health; Nutritional policy; Social policy.

In the second stage, the inclusion criteria were established: articles; research reports; dissertations and theses available in full electronically; in Portuguese or English; published from 2004 to 2017 and expressing the theme proposed in the title, descriptor or abstract. Exclusion criteria were: articles / others in duplicate; letters to the editor; editorials; integrative review; articles with qualitative methodology and case reports. Then progressed with exploration at Scientific Electronic Library Online (SciELO), Latin American and Caribbean Health Sciences Literature (LILACS) and Virtual Health Library (VHL).

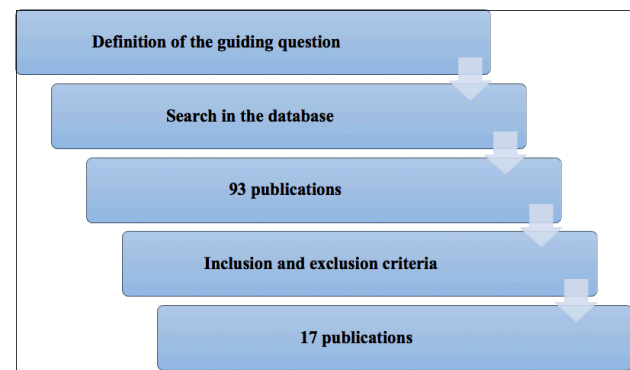
In the next step, the data to be extracted from the publications were elected: year of publication; place of publication / type of study; methodology and main results.

Therefore, an instrument was used to extract these relevance variables. The texts were selected by reading the abstracts and fully considering the article, when the clarifications contained in the abstract were insufficient.

In the last stages, the analyzes, interpretations and syntheses of the publications were made for the presentation of this review to be made. The results were discussed and presented descriptively in order to achieve the objective of this study.

We found 93 publications in the Virtual Health Library from the descriptors used. After analyzing the titles and abstracts, it was found that 76 did not meet the inclusion criteria and were excluded. After further reading and analysis, 17 publications were selected to compose this review, because they met the inclusion criteria (FIGURE 1).

**Figure 1** - Integrative literature review steps - nutritional status and food security in the Bolsa Familia Program. 2018



Source: Author's own data.

## RESULTS

Table 1 presents the characteristics of the publications, according to authors; year of publication; journal title; article title; place / type of study; objectives and main results.

**Table 1** - Characteristics of publications about the nutritional status and food security of families benefited by the Bolsa Família Program. Brazil, 2018

Number, author, year of publication	Journal title	Article title	Location/ type of study	Objectives	Main results
<b>P1 - MENEZES et al., 2008</b>	lbase	Repercussions of the Bolsa Familia Program on the food and nutrition security of beneficiary families	Location: Rio de Janeiro (RJ) Type of study: Quantitative/ Qualitative	Synthesize the results of the research, the main objectives of which are to better understand the profile of families benefited by the Bolsa Familia Program, the ways in which they access food and the impact of the Program on food and nutritional security.	The changes in the diet of families, after receiving the benefit of the PBF, follow the national trend of IBGE Family Budget surveys in the recent past, related to the increase in the consumption of animal proteins, milk and its derivatives; increased consumption of cookies, oils and fats, sugars and processed foods; lesser increase in vegetable consumption.
<b>P2 - FARIA; PENA, 2009</b>	SynThesis Revista Digital FAPAM	Impact analysis of the Bolsa Familia Program in relation to the nutritional status of children from zero to seven years old belonging to the beneficiary families of the program in the municipality of Pará de Minas, Minas Gerais, in 2007/2008	Place: Pará de Minas (MG) Type of study: Cross-sectional	Analyze the impact of the Bolsa Familia Program in relation to the nutritional status of children from zero to seven years old belonging to the beneficiary families by the program; which are monitored by the health sector of the municipality of Pará de Minas, in the period 2007/2008.	Regarding the weight-for-age index, there was a reduction in the number of underweight children and an increase in number of children in nutritional risk. Regarding the height-for-age index, there was an increase in children with low height for age and a reduction in the number of children with nutritional risk. Regarding overweight, prevalences of 6.30% and 8.41% were found. Despite the high prevalence of eutrophic children in both periods of PBF, the prevalence of nutritional deficits and overweight are still significant.
<b>P3 - SOUZA et al., 2012</b>	Revista Epidemiologia e Serviços de Saúde	Socioeconomic profile and food and nutritional insecurity of Bolsa Familia beneficiary family in Viçosa, Minas Gerais State, Brazil, in 2011: a cross-sectional epidemiological study	Location: Brasília (DF) Type of study: Cross-sectional epidemiological	Evaluate the association between socioeconomic indicators and food insecurity in families benefiting from the Bolsa Familia Program	The prevalence of food insecurity was 72.8%: 14.8% severe, 10.7% moderate and 47.3% slight; higher prevalences of food insecurity were found in households with four or more residents ( $p = 0.010$ ); who had water treated by filtration ( $p = 0.023$ ); mothers with less than 10 years of schooling ( $p < 0.001$ ), belonging to families classified at the lowest socioeconomic level ( $p = 0.002$ ).

Number, author, year of publication	Journal title	Article title	Location/ type of study	Objectives	Main results
<b>P4 - CABRAL et al., 2013</b>	Revista Estudos Avançados	Socioeconomic, nutritional and food intake profile of Bolsa Família Program beneficiaries	Location: São Paulo (SP) Type of study: Quantitative	Evaluate the nutritional status, consumption and food security of beneficiaries of the Bolsa Família Program residents of Maceió (AL).	There was a high prevalence of malnutrition in children (18%) and adolescents (20%) and overweight in adults (51%). Beneficiary women were four times more likely to have abdominal obesity than other adults. Most households (92%) had Food Insecurity (IA) - 33% severe.
<b>P5 - SHEI, 2013</b>	<i>Health Affairs</i>	Brazil's conditional cash transfer program associated with declines in child mortality rates	Location: Unified Health System Database - DATASUS Type of study: Cross-sectional	Examine whether the implementation and expansion of a major poverty alleviation program in Brazil, the Bolsa Família (PBF) conditional cash transfer program, was associated with improved child health.	During the first five years of the program, it was associated with a significant 9.3% reduction in child mortality rates, with greater declines in post-neonatal mortality rates than in earlier mortality rates and in municipalities with many PBF users than in those with lower usage rates. There were also greater effects in municipalities with higher child mortality rates at baseline.
<b>P6 - MONTEIRO et al., 2014</b>	Revista Ciência & Saúde Coletiva	Bolsa Família: food and nutritional insecurity of children under 5 years old	Location: Rio de Janeiro (RJ) Type of study: Descriptive Cross-sectional	Identify the prevalence of food insecurity in the Bolsa Família Program beneficiary families and the factors related to this condition, as well as describe the nutritional status of children under five who are part of the program.	The prevalence of food insecurity was 81.6%. Overweight and height deficit among children coexisted. Food insecurity was associated with height for age among children under two years. Per capita household income and food debt significantly influenced the family situation in terms of food insecurity.
<b>P7 - MONTEIRO; SCHMIDT, 2014</b>	Saúde & Transformação Social	The Bolsa Família Program in the context of food and nutrition security in Brazil	Location: Florianópolis (SC) Type of study: Analytical Descriptive	Evaluate the relevance of the PBF in fighting hunger and promoting food and nutritional security among its beneficiaries.	Although access to food has been expanded in recent years among Bolsa Família beneficiary families, the problem of food insecurity is still very significant and must be tackled by the state through public policies and civil society for the enforceability of rights.
<b>P8 - SILVA et al., 2014</b>	Revista Interdisciplinar da PUC Minas no Barreiro	Nutritional profile of preschool children in public day care centers in Belo Horizonte - Minas Gerais, whether beneficiaries of the Bolsa Família or not	Program Location: Belo Horizonte (MG)// Type of study: Comparative descriptive	Evaluate the nutritional profile of preschool children, beneficiaries or not of the PBF, enrolled in public daycare centers of the Eastern Regional of Belo Horizonte - MG	Regardless of whether the Bolsa Família was received or not, most of the evaluated children presented eutrophic for all indexes evaluated. According to the BMI / Age indicator, the group of non-beneficiary children had a high percentage (26.1% and 17%, respectively) of overweight and obesity.
<b>P9 - RAMOS; LIMA; GUBERT, 2015</b>	Revista de Nutrição	Agenda for Intensifying Nutritional Attention to Child Malnutrition: Results of an Inter-Federative Agreement in the Unified Health System	Local: Campinas (SP) Type of study: Cross-sectional	To evaluate the achievement of the goals of the agenda for the intensification of Nutritional Attention to Child Malnutrition in 2013, by identifying the possible variables associated with the performance of the municipalities in relation to the agreed goals.	Among the variables that contributed simultaneously to good performance in nutritional monitoring in the Food and Nutrition Surveillance System and in the beneficiary families of the PBF are: the smallest population size, the geographical distribution in the Northeast, the municipality having used the resource, the greater coverage of Primary Care and the Food and Nutrition Surveillance System.

Number, author, year of publication	Journal title	Article title	Location/ type of study	Objectives	Main results
<b>P10 - SANTOS et al., 2015</b>	<i>Journal of Human Growth and Development</i>	Nutritional Status of Children Benefited by the Bolsa Família Program	Location: São Paulo (SP) Type of study: Cross-sectional	Evaluate nutritional status in children under five years old, whose families benefit from the "Bolsa Família" program of a city in northwestern São Paulo state.	Of the total of children, 8.8% have deficits in the height / age indicator and 4.2% in weight / age; 8.1% and 7.4% overweight in weight / age and weight / height ratio; 4.6% of children under 2 years old had high weight for age and high weight for height and 7.8% of these children had low height for age. The prevalence of deficit and overweight infant population observed in this study was similar to those found in other regions of Brazil.
<b>P11 - CARMO et al., 2016</b>	Jornal de Pediatria	Influence of the Bolsa Família Program on the nutritional status and meal frequency of schoolchildren	Location: Porto Alegre (RS) Type of study: Cross-sectional	Evaluate the frequency of meals and nutritional status among students, according to the participation in the governmental program Bolsa Família.	Among the two groups evaluated (participants and non-participants of the PBF), there was a high prevalence of regular consumption of soda (34.3%), artificial juice (49.5%), and sweets (40.3%), while only 54.3% and 51.7% regularly consumed fruits and vegetables, respectively. The participants in the PBF consume 1.24 times more soft drinks (95% CI: 1.10–1.39) compared to non-beneficiaries. The prevalence of overweight was high in the sample (32.9%), with no difference according to participation in the program.
<b>P12 - DAUFENBACK; RIBAS, 2016</b>	Demetra: alimentação, nutrição & saúde	The "coarse" and the "for children": food consumption in holders of the Bolsa Família Program in Curitiba-PR  <i>O "grosso" e o "das crianças": consumo alimentar em titulares do Programa Bolsa Família em Curitiba-PR</i>	Location: Rio de Janeiro (RJ) Type of study: Descriptive cross-sectional	Investigate subjectivities and extract nuclei of meaning present in the discourse about food consumption of Bolsa Família Program of the Cajuru Sanitary District, in Curitiba-PR.	Increased consumption of ultra-processed foods, justified by "child" food compensation and linked to opposition to basic ("coarse") food, along with fragmented perceptions of "unhealthy" foods and positive valuations about the entry into the world of consumption of certain products from the perspective of the researched Program's participants.
<b>P13 - OLIVEIRA; SOUZA, 2016</b>	Revista Ciências Exatas e Naturais	Assessment of the Proportion of Obese Children Benefited by the Bolsa Família Program in the Regions of Brazil	Location: Guarapuava (PR) Type of study: Analytical descriptive	Evaluate and explain the proportion of obese children, between 0 and 5 years old, benefited by the Bolsa Família Program in 2014, and identify for each region of Brazil the factors that influence the obesity of these individuals.	In the North and Southeast, per capita spending on the PBF had a positive influence on obesity, that is, the more that was spent on this assistance program, the higher the incidence of obese children. In the municipalities of the South and Midwest, per capita income negatively influenced childhood obesity. In the Northeast, in municipalities with a higher unemployment rate and a higher percentage of poor, there was a tendency to have a higher incidence of obesity in children.



Number, author, year of publication	Journal title	Article title	Location/ type of study	Objectives	Main results
<b>P14 - SILVA et al., 2016</b>	Revista Brasileira de Obesidade, Nutrição e Emagrecimento	Nutritional surveillance of children under two years old in the city of Redenção, Ceará: the importance of diagnosis for planning public policies in this age group.	Location: São Paulo (SP)  Type of study: Exploratory cross-sectional	Evaluate the nutritional status of children under two years old in the city of Redenção, Ceará and analyze the associated factors.	19.8% and 20.0% of children were overweight and obese respectively according to the Weight / Height and BMI / Age index, respectively. Current malnutrition was low, being 1.4% and 0.3%, according to Weight / Age and BMI / Age indicators, respectively. Height deficit was found in 9.8% of children. Only the variables mean family income (OR: 2.157; 95% CI: 1.088 - 4.279); early introduction of food (OR: 1.649; 95% CI: 1.010-2.691) and the addition of sugar or honey to the child's diet were statistically significantly associated with nutritional risk status.
<b>P15 - SOUSA; OLINDA; PEDRAZA, 2016</b>	São Paulo Medical Journal	Prevalence of height and overweight deficit / obesity in Brazilian children according to different epidemiological scenarios: systematic review with meta-analysis	Location: São Paulo (SP)  Type of study: meta-analysis review	Verify the prevalence of height and overweight deficits / obesity in Brazilian children according to different epidemiological scenarios.	Of the 33 articles retrieved, 9 involved samples from day care centers, 4 had samples from public health services or social records, 5 related to socially unequal populations and 15 were population-based. Higher chances of dwarfism were found in populations in situations of social inequality and in those in public health services or in social records, in relation to the reference populations. For overweight / obesity, none of the scenarios presented a greater chance than the reference.
<b>P16 - COELHO; MELO, 2017</b>	Revista Ciência & Saúde Coletiva	Impact of the "Bolsa Família" Program on the diet quality of Pernambuco families in Brazil	Location: Rio de Janeiro (RJ)  Type of study: Descriptive	Analyze the impact of the Bolsa Família Program on the diet quality of households in the state of Pernambuco using data from the 2008-2009 Family Budget Survey.	The average value of the Diet Quality Index for beneficiary families of the Program exceeds by 9.05 the average value of the Diet Quality Index of non-PBF families.
<b>P17 - COSTA; BRAGA; TEIXEIRA, 2017</b>	Ensaio Fee	Impacts of the Bolsa Família Program on the nutrient consumption of beneficiary families	Location: Porto Alegre (RS) // Type of study: Descriptive	To evaluate the impacts of participation in the Bolsa Família Program on the consumption of calories from different food groups and the consumption of different nutrients.	The Program appears to have contributed to the increase in calories consumed from cereals, fruits, vegetables, meat and other products of animal origin. Beneficiaries also increased the consumption of most of the considered nutrients, which have important associations with individual health.

Seventeen studies were selected for this review. Among the articles found, most (29.4%) were published in 2016<sup>6</sup>. The *Ciência & Saúde Coletiva* Journal was the only journal responsible for more than one study.

The places with most publications are in São Paulo (SP), Belo Horizonte (MG) and Rio de Janeiro (RJ). The Southeast is the Brazilian region with the largest number of publications: eleven (64%).

The main objective of these studies was to analyze the impact of the PBF on the nutritional status and food security of the benefited families. Most of the results showed that, although the PBF has the capacity to reduce the rates of socioeconomic inequality and hunger, it has been ineffective in combating nutritional insecurity, in addition to not

achieving positive changes in nutritional status and even leading to overweight.

The recommendations refer to the improvement of the PBF for greater nutritional security and the adoption of nutritional education and monitoring strategies that can act concomitantly benefitting users with an adequate state of nutrition.

## DISCUSSION

### Publication Characteristics

Regarding the mapping of scientific production, the Southeast region presented the largest number of publications,

possibly due to the large number of research and graduate centers present in these regions. This region is favored by the greater availability of human and financial resources due to policies implemented by major Brazilian funding agencies.<sup>15</sup>

## Table Analysis

The food security policies implemented since the beginning of the last century in Brazil covered several items, such as agricultural policy; the supply systems; price control and food distribution.<sup>16</sup> Social policies to combat hunger through the introduction of new foods were initiated in the government of Getúlio Vargas with the development of traditional educational practices. Food introduction campaigns were linked to educational practices since, during this period, it was believed that hunger and malnutrition resulted from lack of access to education.<sup>17</sup>

From 1950 to 1995, different social programs were created, such as the National Food Commission (CNA), II National Food and Nutrition Program (II PRONAN), National Food and Nutrition Surveillance System (SISVAN), National Food and Nutrition Security Council (CONSEA), among others, whose purpose was to improve the nutrition of the population. These policies developed until the creation of the Zero Hunger Program in 2001, which marked the beginning of income transfer programs in the country, defined as “direct assistance policies for the needy population.”<sup>18,16</sup>

Thus, only as of 2000, direct income transfer programs began to be adopted by the government and the Food Grant Program for the care of pregnant women, low-income nursing mothers and children under six years. In 2001, the fight against hunger returned to focus in Brazilian politics and the Zero Hunger Project was implemented by the government. This project was officially launched in January 2004, with the objective of combating poverty and it includes Bolsa Família Program (PBF).<sup>16</sup>

Bolsa Família Program currently represents the federal government's main policy to combat poverty and promote social inclusion of beneficiary families, allowing access to health and education as basic social rights. Although health and education conditionalities of the PBF have target audiences in different age groups, a child's good health is very important for his or her good school performance.<sup>19</sup>

The PBF was officially created in January 2004, by Law No. 10,836, with the objective of reducing hunger and poverty of the population through the fusion of income transfer programs already created, such as the National Minimum Income Program linked to Education and Health, School Grant and Food Grant, respectively and the Gas Aid Program (SILVA, 2007).<sup>20</sup>

The conditionalities, goals and duties are commitments that beneficiary families need to fulfill in the areas of Education and Health. In education, families commit to enroll children and adolescents from 6 to 17 years old, who should have a minimum attendance of 85% of classes (6 to 15 years) and 75% for those between 16 to 17 years. In health, they commit to keep vaccination up to date,

perform nutritional monitoring of children under 7 years and prenatal care in pregnant women.<sup>21</sup>

Such conditionalities are positive points of the PBF, resulting in improved health and nutritional status of the beneficiaries and, consequently, better school performance. Thus, the PBF, besides allowing access to basic social services, provides the beneficiary families with the schooling necessary for the exercise of citizenship.<sup>22,19</sup>

According to Decree No. 5,209 of September 17, 2004, which regulated the PBF, access to the public health services network; education and social assistance and the right to healthy eating would be provided to families in poverty, identified in the Federal Government's Single Registry (CadÚnico). Through CadÚnico, considered the gateway to access the benefits available through social programs, the municipal, state and federal government agencies identified who the needy families were and how they lived. To receive the benefit, one must be registered and have a monthly family income per person between R\$ 77.01 and R\$ 154.00 (poverty) or less than R\$ 77.00 (extreme poverty) with children, adolescents, pregnant women and / or nursing mothers in the family. In addition, the so-called Bolsa Família conditionalities must be duly fulfilled.<sup>23</sup>

The PBF contributed to the increase in the consumption of important nutrients. Although the amount of some of these nutrients consumed is lower than recommended, the PBF, in fact, seems to have been responsible for alleviating these deficiencies among its beneficiaries. The program has had a major impact on the decrease in child mortality and may have reduced child deaths by up to 19.4%, and this reduction is even greater if the cause of death is from diarrhea or malnutrition. PBF coverage is higher in small municipalities, as the implementation of primary care in regions with low social and health indicators was prioritized, due to the high vulnerability indexes in these areas.<sup>24 - 26</sup>

In fact, PBF has contributed to increased access to food in quantity and variety, but it has not resulted in improved nutritional quality.<sup>27</sup> Families are developing unhealthy eating habits by consuming higher-calorie, low-value foods. PBF beneficiaries are eating foods with a greater variety and quantity of cereals, biscuits, milk, animal protein, treats, ultra-processed products and lesser consumption of fruits and vegetables.<sup>28</sup>

In this context, the PBF has directly influenced the eating habits of the population, either positively or negatively, depending on the choice of beneficiaries. Beneficiaries tend to spend a significant portion of the amount received on the purchase of low nutritional value, calorically dense foods, as the choice of the types of food food is compromised by the spread of low-nutrient advertisements. In 85% of the benefited families, there was a higher investment in low nutritional value foods, such as sweets and treats, one of the objectives being the satisfaction of the children's desire for consumption.<sup>28, 5, 4</sup>

The average amount of food group portion consumption is generally higher in participating households than in non-participating households, and there is a positive effect on

income transfers on the diet quality of Pernambuco family units, showing the efficiency of PBF to improve the nutrition of beneficiary families.<sup>2</sup> The main nutritional disorders in children, such as excessive weight and chronic malnutrition, show a scenario of nutritional transition and point out the need for strengthening food and nutritional monitoring actions and the implementation of programs on health and nutrition policies.<sup>29,30</sup>

In a research project conducted in Belo Horizonte with the objective of evaluating the nutritional profile of preschool children, whether or not benefited by the PBF, enrolled in public daycare centers in the Eastern Region of Belo Horizonte - MG, it was found that, comparing beneficiary and non-beneficiary children in terms of the nutritional aspect, there was no difference and most of them were eutrophic. Malnutrition was present in a lower percentage in both groups and this shows that hunger has not yet been eradicated in Brazil, even after income transfer programs were initiated.<sup>31</sup>

According to a study by Oliveira and Souza (2016), which evaluated the proportion of obese children, between 0 and 5 years old, benefited by the Bolsa Família Program in 2014, and identified, for each region of Brazil, the factors influencing the obesity of these individuals, the higher the spending on the referred care program, the higher the incidence of obese children. What could justify the presence of excessive weight in these children who benefit from the PBF is the nutritional transition experienced in the country, due to an increase in the consumption of processed foods, with high caloric value and a reduction in fruit and vegetable intake.<sup>32</sup>

Another study, conducted by the Brazilian Institute of Social and Economic Analysis (IBASE)<sup>27</sup>, in 229 municipalities in 2007, with the objective of investigating the influence of the PBF on food and nutritional security, showed that 87% of the families interviewed reported spending the entire amount received on food; 70% responded that they increased the quantity and variety of foods and 63% started buying more foods favored by children. The prevalence of food insecurity was 83%, and more than 50% had food restriction or starved<sup>27,28</sup>. This result is similar to what happened in other studies in which 72.8%<sup>33</sup>, 81.6%<sup>34</sup> and 71.28%<sup>35</sup> of the families had some degree of food insecurity. The results demonstrated that the lower the socioeconomic level, the lower the educational level, the less access to credit and the more severe food insecurity.

Another research carried out in Rio de Janeiro, aiming to obtain information about the nutritional status of the beneficiaries of the PBF and to evaluate the impact of this program on the nutritional profile of the population served, contradicts some of these results, considering that the PBF is not modifying the dietary nutritional status of the beneficiaries, since there is real difficulty in finding data in the literature demonstrating the effectiveness and efficiency of the PBF regarding the nutritional status of the beneficiary families.<sup>36</sup>

Studies conducted in Minas Gerais and São Paulo with the objective of evaluating the nutritional status of children benefiting from the PBF; consumption and food security of beneficiary families have identified that being overweight is a public health problem in those receiving government aid.<sup>37-39</sup> Comparing with a study conducted in João Câmara, Rio Grande do Norte, with children who receive aid with those who do not, children who benefit from the PBF are 3 times more likely to consume sweets.<sup>40,33</sup>

However, a study conducted in Porto Alegre to assess the frequency of meals and nutritional status of students benefiting from the PBF found that when compared the nutritional status of 319 school-age children, the results revealed a high rate of excess weight among the students regardless of whether they are beneficiaries of the program or not<sup>7</sup>. It also corroborated a study conducted in the Zona da Mata of Minas Gerais that found that 5.2% of the assessed children were considered obese, with no statistical difference between beneficiaries and non-beneficiaries.<sup>41</sup>

Research shows that PBF has had a positive impact on the food and nutrition security of beneficiary families, improving access to a varied diet in both quantity and quality and raising the living standards of respondents.<sup>39,5,21</sup>

It cannot be disregarded that the PBF helped a lot in the purchase of food, but it was not enough to solve the problem of food insecurity. In this sense, it is recommended that the other institutions linked to the program should invest in the education, health, job and income generation, and the implementation of policies aimed at reducing social inequality.<sup>42</sup> Initiatives such as support to family farming; encouraging sustainable food consumption; the expansion of the Workers' Food Program (PAT) and the training of young people to expand their access to the labor market are recommended in the studies. It is believed that linking the PBF to other conditional cash transfer programs may be the path to advance food and nutrition security in Brazil.<sup>43</sup>

## CONCLUSION

Most of the studies contained in this integrative review showed that PBF had a positive effect on the nutritional status and food security of beneficiaries, showing that while PBF has the ability to reduce rates of socioeconomic inequality and hunger, it has been ineffective in the fight against food insecurity, besides not achieving positive changes in nutritional status or even leading to excessive weight.

Some studies have shown that access to income has resulted in higher consumption of processed and low nutritional value foods, contributing to the increase in cases of obesity and chronic disease, especially among the benefited children.

However, the challenge remains for actions aimed at generating and disseminating information on the importance of more varied and nutrient-rich diets from natural and healthy products, and the pursuit of investments in education,



health, and work and income and implementation of policies aimed at reducing social inequality.

The recommendations refer to the improvement of the PBF for greater food security and the adoption of nutrition education and monitoring strategies that can act concomitantly allowing users to reach an adequate nutritional status.

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