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

Taciana Fonseca Braga de Carvalho1, Thaís da Silva Sá2, João Pedro Paulino Ruas3, Maria Aparecida Vieira4, Cristina Andrade Sampaio5

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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 Familia 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

1 Pediatrician, graduate student in Primary Health Care at the State University of Montes Claros - Unimontes, professor at Centro Universitário Fip Moc, Montes Claros - MG - Brazil
2 Medical Student, State University of Montes Claros - Unimontes, Montes Claros - MG - Brazil
3 Medical Student, Centro Universitário Fip Moc, Montes Claros - MG - Brazil
4 Nurse, PhD in Sciences, professor at the Department of Nursing and the Postgraduate Program in Primary Health Care at the State University of Montes Claros - Unimontes, Montes Claros - MG - Brazil
5 Anthropologist, PhD in Public Health, professor at the Department of Mental Health and Public Health and the Postgraduate Program in Primary Health Care at the State University of Montes Claros - Unimontes, Montes Claros - MG - Brazil
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.  

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.  

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.  

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.  

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.  

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.  

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

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. 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).

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 Familia Program. Brazil, 2018

<table>
<thead>
<tr>
<th>Number, author, year of publication</th>
<th>Journal title</th>
<th>Article title</th>
<th>Location/ type of study</th>
<th>Objectives</th>
<th>Main results</th>
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</thead>
<tbody>
<tr>
<td>P1 - MENEZES et al., 2008</td>
<td>Ilbase</td>
<td>Repercussions of the Bolsa Familia Program on the food and nutrition security of beneficiary families</td>
<td>Location: Rio de Janeiro (RJ)</td>
<td>Type of study: Quantitative/Qualitative</td>
<td>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.</td>
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<tr>
<td>P2 - FARIA; PENA, 2009</td>
<td>SynThesis Revista Digital FAPAM</td>
<td>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</td>
<td>Place: Pará de Minas (MG)</td>
<td>Type of study: Cross-sectional</td>
<td>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.</td>
</tr>
<tr>
<td>P3 - SOUZA et al., 2012</td>
<td>Revista Epidemiologia e Serviços de Saúde</td>
<td>Socioeconomic profile and food and nutritional insecurity of Bolsa Familia beneficiary family in Vicos, Minas Gerais State, Brazil, in 2011: a cross-sectional epidemiological study</td>
<td>Location: Brasilia (DF)</td>
<td>Type of study: Cross-sectional epidemiological</td>
<td>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 &lt;0.001), belonging to families classified at the lowest socioeconomic level (p = 0.002).</td>
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<td>Number, author, year of publication</td>
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<td>P4 - CABRAL et al., 2013</td>
<td>Revista Estudos Avançados</td>
<td>Socioeconomic, nutritional and food intake profile of Bolsa Família Program beneficiaries</td>
<td>Location: São Paulo (SP)</td>
<td>Type of study: Quantitative</td>
<td>Evaluate the nutritional status, consumption and food security of beneficiaries of the Bolsa Família Program residents of Maceió (AL).</td>
</tr>
<tr>
<td>P5 - SHEI, 2013</td>
<td>Health Affairs</td>
<td>Brazil's conditional cash transfer program associated with declines in child mortality rates</td>
<td>Location: Unified Health System Database – DATASUS</td>
<td>Type of study: Cross-sectional</td>
<td>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.</td>
</tr>
<tr>
<td>P6 - MONTEIRO et al., 2014</td>
<td>Revista Ciência &amp; Saúde Coletiva</td>
<td>Bolsa Família: food and nutritional insecurity of children under 5 years old</td>
<td>Location: Rio de Janeiro (RJ)</td>
<td>Type of study: Descriptive Cross-sectional</td>
<td>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.</td>
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<td>P7 - MONTEIRO; SCHMIDT, 2014</td>
<td>Saúde &amp; Transformação Social</td>
<td>The Bolsa Família Program in the context of food and nutrition security in Brazil</td>
<td>Location: Florianópolis (SC)</td>
<td>Type of study: Analytical Descriptive</td>
<td>Evaluate the relevance of the PBF in fighting hunger and promoting food and nutritional security among its beneficiaries.</td>
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<tr>
<td>P8 - SILVA et al., 2014</td>
<td>Revista Interdisciplinar da PUC Minas no Barreiro</td>
<td>Nutritional profile of preschool children in public day care centers in Belo Horizonte - Minas Gerais, whether beneficiaries of the Bolsa Família or not</td>
<td>Program Location: Belo Horizonte (MG)/Type of study: Comparative descriptive</td>
<td></td>
<td>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</td>
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<td>P9 - RAMOS; LIMA; GUBERT, 2015</td>
<td>Revista de Nutrição</td>
<td>Agenda for Intensifying Nutritional Attention to Child Malnutrition: Results of an Inter-Federative Agreement in the Unified Health System</td>
<td>Local: Campinas (SP)</td>
<td>Type of study: Cross-sectional</td>
<td>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.</td>
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<td>P10 - SANTOS et al., 2015</td>
<td>Journal of Human Growth and Development</td>
<td>Nutritional Status of Children Benefited by the Bolsa Familia Program</td>
<td>Location: São Paulo (SP) Type of study: Cross-sectional</td>
<td>Evaluate nutritional status in children under five years old, whose families benefit from the “Bolsa Familia” program of a city in northwestern São Paulo state.</td>
<td>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.</td>
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<tr>
<td>P11 - CARMO et al., 2016</td>
<td>Jornal de Pediatria</td>
<td>Influence of the Bolsa Familia Program on the nutritional status and meal frequency of schoolchildren</td>
<td>Location: Porto Alegre (RS) Type of study: Cross-sectional</td>
<td>Evaluate the frequency of meals and nutritional status among students, according to the participation in the governmental program Bolsa Familia.</td>
<td>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 (22.9%), with no difference according to participation in the program.</td>
</tr>
<tr>
<td>P12 - DAUFEN-BACK; RIBAS, 2016</td>
<td>Demetra: alimentação, nutrição &amp; saúde</td>
<td>The “coarse” and the “for children”: food consumption in holders of the Bolsa Familia Program in Curitiba-PR O “grosso” e o “das crianças”: consumo alimentar em titulares do Programa Bolsa Familia em Curitiba-PR</td>
<td>Location: Rio de Janeiro (RJ) Type of study: Descriptive cross-sectional</td>
<td>Investigate subjectivities and extract nuclei of meaning present in the discourse about food consumption of Bolsa Familia Program of the Cajuru Sanitary District, in Curitiba-PR.</td>
<td>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.</td>
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<tr>
<td>P13 - OLIVEIRA; SOUZA, 2016</td>
<td>Revista Ciências Exatas e Naturais</td>
<td>Assessment of the Proportion of Obese Children Benefited by the Bolsa Familia Program in the Regions of Brazil</td>
<td>Location: Guarapuava (PR) Type of study: Analytical descriptive</td>
<td>Evaluate and explain the proportion of obese children, between 0 and 5 years old, benefited by the Bolsa Familia Program in 2014, and identify for each region of Brazil the factors that influence the obesity of these individuals.</td>
<td>In the North and Southwest, 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.</td>
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</table>
Seveneteen studies were selected for this review. Among the articles found, most (29.4%) were published in 2016. 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 region presented 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.\textsuperscript{15}

**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.\textsuperscript{16} 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.\textsuperscript{17}

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.”\textsuperscript{18,16}

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).\textsuperscript{16}

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.\textsuperscript{19}

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).\textsuperscript{20}

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.\textsuperscript{21}

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.\textsuperscript{12,19}

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 Familia conditionalities must be duly fulfilled.\textsuperscript{23}

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.\textsuperscript{24 - 26}

In fact, PBF has contributed to increased access to food in quantity and variety, but it has not resulted in improved nutritional quality.\textsuperscript{27} 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.\textsuperscript{28}

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 benefitted 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.\textsuperscript{26,3,4}

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
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.27,28 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.39,40

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 to 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.26. 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.41

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 quality and quantity and raising the living standards of respondents.39,5,21

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.42 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.43

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,
heath, work and income and implementation of the programs 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.

REFERENCES


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Corresponding author
Cristina Andrade Sampaio

Address: State University of Montes Claros - Unimontes
Rua Engenheiro Nilson Crispim da Costa, 40
Morada da Serra, Montes Claros/MG, Brazil

Zip code: 39401-773
E-mail address: cristina.sampaio@unimontes.br
Telephone number: +55 (038) 98402-8801

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