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# International Journal of Food, Nutrition and Public Health

## Changing the perspective:

providing better nutrition and food  
security for families impacted by  
the pandemic in Brazil







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food security



# Abstract

## Purpose

The purpose of this paper is to present how the COVID-19 pandemic has had a direct impact on the food security of families in Brazil.

## Design/methodology/approach

This is a descriptive study with secondary data analysis. Questionnaires were conducted with families who were part of a nutrition education programme.

## Findings

Families in Brazil were severely affected by the pandemic, economically, socially and in health. Of these families, 10% do not currently have access to the food they need; this exacerbates the vulnerability that was already existent within the Brazilian population. In addition, 64% of the households had a decrease in their monthly income, decreasing their access to fresh, healthy foods. There needs to be urgent mobilisation of local stakeholders to bring positive change to these families.

## Research limitations/implications

This research was conducted by a non-profit organisation, Instituto Melhores Dias (secondary data analysis used). There are therefore limitations in terms of resources, sampling and analysis.

## Practical implications

It is of utmost importance to turn attention to this topic now, because the prediction is that the situation of food security and hunger will worsen in the next months and even years, not only in Brazil but globally. This requires urgent action in terms of providing resources to populations and finding alternatives to reach more sustainable and equitable communities.

## Keywords

COVID-19 pandemic, hunger, malnutrition, food security, health education



# Introduction

As we approach the halfway point of the “Decade of Nutrition”, worldwide data demonstrate that countries are off-course in meeting the targets set to be achieved by 2025 regarding childhood stunting, wasting and obesity. Instead, areas such as Latin America are facing a double burden; one of malnutrition but also with numbers of obese and overweight people reaching epidemic proportions (Galicia et al., 2016). It has been evidenced that problems related to malnutrition and obesity need a wider approach, or even a “systemic perspective”, that takes expanded dimensions of intervention into consideration (Swinburn et al., 2019). This global pandemic of obesity and malnutrition is driven mainly by the systems of “food and agriculture, transportation, urban design, and land use” (Swinburn et al., 2019, p.791). However, socioeconomic, cultural and political factors also play a role in this relationship. That is why it is ever more essential that we seek alternatives that are engaging and multi-dimensional in order to address all the factors influencing malnutrition and obesity.

The COVID-19 pandemic that devastated the world in 2020 has shown to have an effect on populations’ food security at several levels (Devereux et al., 2020; Ribeiro-Silva et al., 2020). More than 820 million people were identified as “food insecure” before the onset of the pandemic and an ever more worrying crisis has been categorised (UN, 2020). Brazil has the third highest number of COVID-19 cases worldwide, recently passing 5 million

(worldometers, 2020). The measures taken to contain the spread of the virus in early 2020, aligned with the political instability, have created a fragile state among the population, who face exacerbated vulnerability. Before the emergence of the Coronavirus Brazil had 16.2 million unemployed people, and around 40% of the working class was working informally at the end of 2019 (Antunes, 2020). In the early 2000s, Brazil invested in cash-transfer programmes and a series of initiatives to alleviate poverty and remove the country from the hunger map, with a 25% reduction in poverty from 2004 to 2014 (Ribeiro-Silva et al., 2020). However, even with a reduction in undernutrition in these last few years, with a large decrease in children under five being underweight and stunting (Galicia et al., 2016), overweight and obesity currently exist alongside micronutrient deficiencies, such as iron-deficiency anaemia. Literature has indicated an average prevalence of anaemia among children in Brazil of 53% (Jordão et al., 2008), placing the problem in the “severe” category of public health (WHO, 2001). In addition, between 2015 and 2017, up to 5.2 million Brazilians suffered from malnutrition, demonstrating an already fragile and unstable situation in terms of food security, even before the onset of the COVID-19 pandemic in the country.

The crisis caused by the pandemic in Brazil has actually magnified a process of the dismantling of social policies and programmes that have worked in the past to combat food insecurity and vulnerability (Ribeiro-Silva et al., 2020). The actual extent of the effects of



the pandemic are currently unknown, although efforts to mitigate and combat hunger are taking place locally, with the engagement of grassroots organisations. Because these conditions (food insecurity, malnutrition and obesity) are so complex, the approach to deal with them also needs to be overarching and integrate the health system, the food system and the social protection systems (UN, 2020). The current conditions and situation offer an opportunity for social programmes to promote stronger collaboration between stakeholders, policy-makers and communities, and to demonstrate that one health condition is interconnected to several other systems within the social fabric (Huizar et al., 2020).

Civil society organisations have a role to play in not only advocating for policy change at a macro level but also delivering information and assistance to communities at a local, grassroots level (Swinburn et al., 2019; Tallberg et al., 2015). Organisations have the ability to mobilise communities so that they feel empowered to act and find solutions on their own, or at least to draw and map their actual needs in order to request the right aid. The objective of this paper is to illustrate the current impact of the COVID-19 pandemic on the food security of families in Brazil, and demonstrate how a nutrition education programme can be a way forward in this current scenario.





## Methods

Secondary data analysis was used, based on information and research developed by the non-profit organisation, Instituto Melhores Dias. To assess the impact of the pandemic, an online survey was conducted with 1,337 families in three Brazilian states. The families answered the questions voluntarily and their anonymity was ensured. A descriptive investigation will be used here to demonstrate how social programmes can bring about change in the dietary choices and behaviours of families, providing a possible way forward in this current paradigm of unhealthy eating behaviours intensified by the current pandemic (Huizar et al., 2020).

Official documents from Instituto Melhores Dias and programme results from reports were analysed. This paper will first show the results of the assessment carried out regarding the COVID-19 pandemic and quarantine in Brazil. It will then demonstrate how a multi-strategy nutrition education programme has actual results that bring about alternatives for healthier eating, and finally, the paper discusses possible strategies and ways forward in this current scenario.

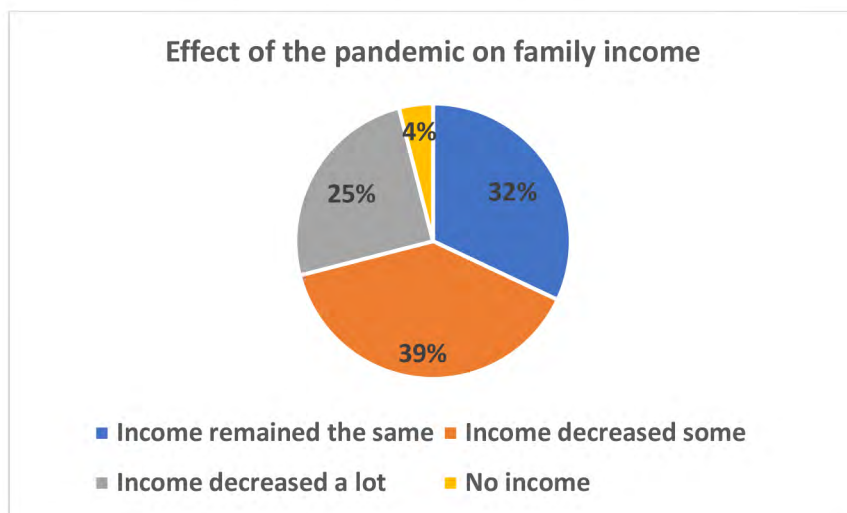




## Results - Effects of the COVID-19 pandemic on Food Security

In order to detect the current status of the pandemic effect on the food security of the population, Instituto Melhores Dias (a Brazilian registered NGO) developed a questionnaire that was sent online to families from four different municipalities in three different states. The questionnaire asked about their current socioeconomic status and the effect of the pandemic on their food availability and change in dietary habits. A total of 1,337 questionnaires were answered; 94% of the respondents were women. As a characterisation of their current socioeconomic status, the results show that 37% of the respondents were not working;

in addition, for 20% of these there is no-one in the house working. It is important to note that 18% of the families mentioned they were already part of the cash transfer programme, Bolsa Familia (there are regional differences that are not addressed here), and 48% are currently receiving a federal emergency income for the period of the pandemic. Regarding their income, Figure 1 below shows how 64% of the families attest that their income has decreased after the beginning of this pandemic period.



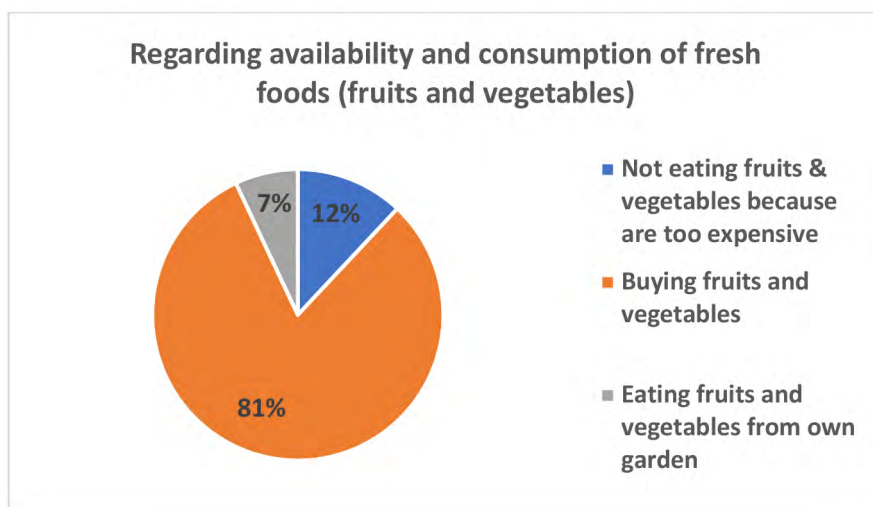
**Figure 1: Effects of the pandemic on families' income**

Source: Designed by authors



Regarding food security and nutrition, one striking result is that 10% of the families currently do not have access to the food they need, and 23% are families with 5 or more people. A total of 17% affirmed their feeding practices got worse after the onset of the health crisis, and 8% have stopped eating fruit and vegetables. Figure 2 below demonstrates

how families were affected regarding their fresh food consumption. The majority still buys fresh foods, but 12% consider them too expensive to purchase at the moment. Also, 38% of the respondents mentioned that school meals were relevant, demonstrating the role it had on the daily meal of the children.



**Figure 2: Families' consumption of fresh foods**

Source: Designed by authors

A total of 23% of the respondents mentioned they suffered from a non-communicable disease, and within the families, 40% had someone in the household with a chronic condition. This fact brings direct attention to the urgent need to implement long term behaviour change interventions for the population, since they are at risk of developing further complications, worsened by inadequate eating habits. This brings us to the second part of this paper that presents results from a nutrition education programme implemented in several communities in Brazil. These have generated positive results in terms of behaviour change and healthier eating practices.

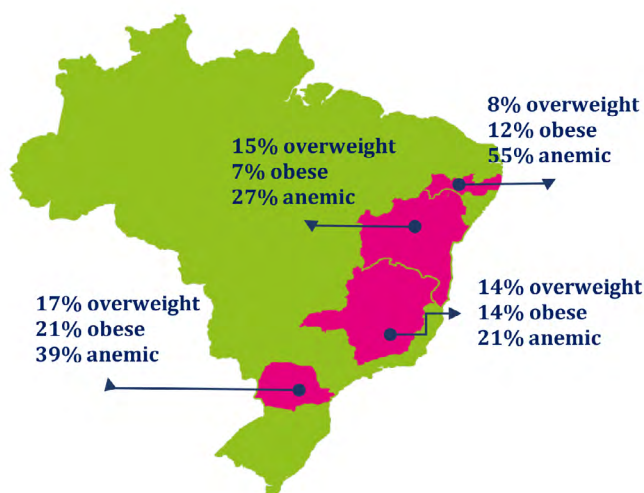


## Results – Healthier Diets, Healthier Lives

The Brazilian non-profit organisation Instituto Melhores Dias, implemented a three year programme in communities across Brazil. The programme had interventions including:

- monitoring of height/weight and anaemia level of school children;
- implementation of school gardens;
- training for teachers and mothers on nutrition and home gardening;
- capacity building of school management teams and school cooks to ensure a healthier meal for the children;
- training of community health agents who spread the messages directly during their household visits; and
- close contact with local government institutions to ensure these activities were long-lasting.

Initial programme diagnostics showed that an average of 27% of children were overweight or obese. The map below shows the results found in communities across Brazil.



**Figure 3: Map of Brazil with results of BMI and Anaemia levels among school-age children; part of the Nutrition Education programme**

Source: Designed by authors

After the three years, research was carried out with the participating audience. Children were also part of the research and after taking care of school or home gardens, 33% of them said they began eating more vegetables than before, 15% tried different fruit and vegetables, and 31% began eating vegetables for the first time. These figures show a total of 79% of the children saying the school and/or home gardens had a direct effect on their eating behaviour. Parents mentioned that 74% of the children ate more fruit and vegetables after they began participating in educational activities with school or home gardens.



**Figure 4: Children take care of their home gardens during the pandemic as part of the nutrition education programme developed by Instituto Melhores Dias, Brazil**

*Source: Photos taken by the Instituto Melhores Dias*



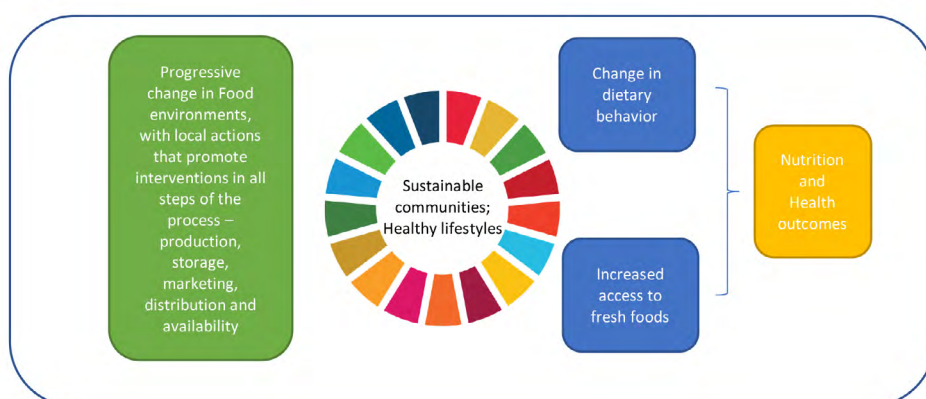


## Discussion

These general brief results of programme interventions demonstrate how important it is to change the way families choose what and how to eat. An approach that tackles the increase of fresh food with home gardens, beyond the school gardens, can bring about the necessary change to the scenario demonstrated in the research showing the impact of COVID-19, where 12% of families did not have the money to buy fresh healthy foods. A home garden not only supplies vegetables but instigates children and the families to eat healthier.

With over 25 years of experience in programme implementation in several Brazilian communities,

Instituto Melhores Dias has developed a strategy that has demonstrated a possible impact on both the health outcome of children and their families, and long-term social, economic and environmental change. With local stakeholder involvement and capacity building of the main players, the objective is to create a grassroots network of relationships between schools, health units, local leaders and families so they can look for alternatives that suit their own local needs. Figure 5 below shows an overview of how programmes and policies can ultimately lead to a change in health outcomes and create sustainable communities.



**Figure 5: Programmes, policies, community engagement and education are crucial for achieving healthier and sustainable futures**

Source: Adapted by authors from UN, 2020

The limitations of this study include sampling procedures and general analysis. Due to the nature of the work carried out by Instituto Melhores Dias (of not being a research institution), the results and research strategies are carried out based on the resources available during the programme implementation: there is no specific grant for the institution to develop research work. The results brought forth here are an effort to approximate the grassroots approach developed by non-profits to the academic research field. The COVID-19 research had a limitation in the choice of participants, since even though it was a random and voluntary participation, the families may have been involved in nutrition education programmes; this might have an effect on the answers regarding food and dietary habits (the importance of eating fresh foods, for example). Despite these issues,

the results bring forth important aspects that need to be considered during this period of pandemic, aspects that are directly affecting the health of families.

This current world scenario has left the vulnerable even more susceptible to possible negative health outcomes. There was a disruption in the availability and accessibility of food, which usually ensured a country's food security. At the same time, this pandemic has been shown to be an opportunity for change in several paradigms that were perpetuating unhealthy eating behaviours and dietary choices (Huizar et al., 2020). Programmes such as the one discussed here are examples of possible collaboration initiatives that can improve health and bring opportunities in a more equitable manner.





## Conclusions

In summary, data provided from communities and/or non-governmental organisations that work at a grassroots level can provide insightful information as to possible policy intervention opportunities. In times of crisis, such as the COVID-19 pandemic, those that were already vulnerable in an economic, social and health way became even more vulnerable. The line that divides these populations from actively participating in society is very fragile. As discovered in this study, a country where 40% of the workforce is in informal employment, any disruption in the food system and their

economic situation quickly turns the table towards a situation of food insecurity, hunger and malnutrition.

The coming months (and even years) are crucial for governments, institutions and civil society organisations to observe and intervene in order to avoid a possible increase of epidemic proportion on the rates of childhood obesity and undernutrition in children that will bring about an even higher death rate of non-communicable disease in the future.

## Conflicts of interest and other disclosures

This manuscript is an original work and has not been submitted for publication elsewhere. All authors reviewed and approved the article. The authors have no interest or relationship that conflicts with the results shown here.





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## Biography

**Gabriela Nasser** is an Anthropologist and has a Masters' degree in Global Urban Health from the University of Freiburg, Germany.

As institutional director of Instituto Melhores Dias, she is involved in multidisciplinary projects in public health and sustainable development. She has worked in the development sector in Brazil for over 20 years, working with social programmes focused on health prevention and community development.

**Joyce Capelli** has a degree in Dental Sciences, a Master in Dentistry, Specialisation in Administration for the Non-Profit Sector, Training in Depth Psychology. Dr Capelli is the president and executive director of Instituto Melhores Dias. She has 27 years of experience in leading efforts for civil society organisations and has also worked as a consultant for corporate social programmes, with an emphasis on developing programmes and building partnerships.

