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Food Environments Effect on Nutrition in Urban Areas of Brazil

To reach the United Nations second sustainable development goal of zero hunger, Brazil worked vigorously to feed its population and fight against food insecurity in its nation. The country left the hunger map in 2014 but as hunger decreased, another issue arose in urban areas, the quality of the food (Santiago et al., 2018). Food deserts and swamps are highly affecting Brazil's citizens in low-income areas and are an increasing issue in the country's public health. Creating a good food environment will aid in offsetting obesity, heart disease, and malnutrition in Brazilian communities. Access to affordable and nutritious food is a right that every human should have but as Brazil combats this emerging issue in food insecurity we recognize that this is an intricate issue that requires a collaboration of solutions to fix.

Brazil is the largest country in Latin America holding a population of 214.3 million people. The average family size is 2.77 people (World Bank, 2021). As of 2022, 15.5% of Brazilians were considered severely food insecure (The Borgen Project, 2023). Healthcare is free to any legal resident but there is a prevalent issue of long wait times and overcrowding (Columbia Mailman School of Public Health, n.d.). So when complications arise from poor diet it can be difficult to garner treatment and as most diet-related conditions have long term effects, it can be arduous to find appropriate care. The median income in Brazil was $16,921 in 2021 (Global Data). 20% of Brazil's population lives in shanty towns or favelas (The Borgen Project, 2015). 1 in 3 (29.4%) people in the country falls below the poverty line. Black people and children are disproportionately affected with Black and mixed-race people being 37.7% of impoverished people and children under 14 making up 46.2% (Tokarnia, 2022). Poverty deepens the effects of food insecurity and Black and mixed-race communities are asymmetrically affected by poverty, food security also disproportionately affects these communities. Children are also being affected, improper nutrition leads to slowed development which can in turn create many health issues that Brazil's stressed healthcare system may not provide adequate care for.

Agriculturally, Brazil is flourishing with the country having over 55 million hectares of arable land (World Bank, 2020) and being the biggest agricultural net exporter. Some of the country's agricultural exports are citrus, coffee, and soybeans (Valdes, 2022). Though as the city urbanizes with 87% of Brazilians living in urban areas (World Bank, 2021) and the service sector rapidly growing with it taking 71% of the country's workforce (Bajpai, 2022) agricultural development seems to be taking the sidelines. Although food seems to be a big part of Brazilian culture, The 2010 census showed that the Brazilian diet is switching to processed foods as the country rapidly urbanizes (IBGE, 2010). The sale of ultra-processed food and beverage products increased by 48% between the years 2000 and 2013 (PAHO/WHO, 2015). This change in diet can lead to devastating health effects such as heart disease and obesity that has been recorded in other urbanized countries such as The United States and the United Kingdom.

The definition of a food desert is often debated but there is a general consensus that it describes places where it is difficult to gain access to affordable, nutritious food. A food swamp is an area where wholesome food is available but unhealthy food options are abundant such as fast-food chains and convenience stores (Chen & Gregg, 2017). A healthy diet consists of fruits, vegetables, whole grains, legumes, nuts, and a limited amount of free sugars and salt (WHO, 2020). In food deserts and swamps, it is hard to get the proper nutrients required for a healthy diet because of the lack of availability of foods containing them. Ultra-processed food was responsible for about 57,000 premature deaths in Brazil in adults aged 30-69 in 2019 (Nilson et al., 2022) and a study found that there was an association between mothers in areas with a lack of access to healthy foods and babies being born with low birth weight and a greater chance of SGA (Victor et al., 2022). This is a public health crisis that is negatively affecting the whole population of cities in Brazil from young infants to adults. If work is not done to solve this problem a whole array of health issues could spawn in communities, ranging from obesity and heart disease in places with food swamps to anemia and vitamin deficiencies in places with food deserts.

As food deserts and swamps are a public health problem, large-scale public policy is necessary to fix this widespread issue. Zoning laws are an advantageous tool in combating food deserts. For example, implementing regulations to cap the number of fast-food restaurants in one area and requiring places such as convenience stores to have a certain amount of healthy foods will drastically change the food environment. (Olson & Mickel, 2021). Another form of public policy is creating economic incentives that will motivate businesses to carry healthy food and move to areas that usually do not have access to nutritious foods. Incentives such as low-interest loans, tax breaks, and grants to businesses that develop these models will have a high impact on the availability of fresh foods in food deserts and swamps. Advocacy will be needed to convince local leaders and government officials to implement these policies, because of this education and awareness are vital for the demise of food deserts and swamps.

Education on nutrition is also a huge contributing factor to combatting the effects of food deserts and swamps in Brazil. If people know the effects that their food environment has on their well-being then they will be willing to advocate for policy and change their patterns for a healthier life. A project created by business and public administration undergraduate students in a subject called Integrated Education for Sustainability exhibits the circumstances of food deserts in the city of São Paulo (Santiago et al., 2018). After doing extensive research, the students collected the data and crafted a website that was intended to educate the public on the many facets of food deserts including physical, psychological, and economic barriers. The website presented alternatives such as farmer's markets and community farms in the city. In Brazil, family is important, and creating an educational campaign on how food environment effects can affect whole families from babies to adults could show the widening impact that food environments have. The campaign can be displayed in places such as ads, websites, and social media to spread awareness across the country. Teaching kids in school can also help foster proper nutritional education in early childhood so that they are aware of the positive and negative effects diet can have on themselves and their community.

Urban farming can repress food swamps and deserts on a local level. Starting programs such as farmer's markets and community gardens can help increase the amount of fresh produce available. Urban farming is accessible as it can take place in places like vacant lots and rooftops. Brazil is also an ideal place to implement urban farming as its climate and geography are already amazing for agriculture. Many cities in Brazil are starting to do urban farming, especially in the favelas (Borgen Project, 2022). In Rio de Janeiro, there is a government-funded program called "Hortas Cariocas" where urban farming is being used to strengthen food security. There are 48 units where 217 farmers work to farm crops. These farms are being implemented in areas of the city with the lowest income rates creating job opportunities and food security where it is needed most. The garden provided food as well as income opportunities to over 60,000 families in 2020 (United Nations, n.d.). Working with this program to expand its enterprises into other metropolises will greatly benefit the country if the success seen in Rio can be replicated in other areas where food deserts are an increasing issue.

Combined, these solutions should be an effective way to solve the problem of food deserts and swamps in Brazil. These solutions should meet the needs of the urban population of Brazil but there also needs to be a willingness for change brought by local leaders. The government also has to be present to bring about policies to control the impact that food deserts and swamps have in urban areas. The financing for these programs should be relatively affordable because a lot of these projects such as urban farming are already ongoing and just need to be spread across more areas of Brazil. The educational campaign, creation of grants, and expansion of urban agriculture will need external funding. Funding would most likely come from non-profits whose goal is to fight against food insecurity and support from the United Nations. Alongside combating malnutrition, these solutions also connect with the United Nations' sustainable goals of zero hunger, good health, and well-being, decent work, and economic growth, sustainable cities and communities, and partnerships for the goals.

As the topic of food insecurity is talked about, it is important to acknowledge the role of food environments as it greatly affects the health and well-being of a population. Public policy, education, and urban farming are three solutions that combined can help tackle the issue of food security both at a local level and on a large scale. It will take a community effort to combat food insecurity and intervention from local leaders and the government is essential as this issue is multifaceted and complex. Food is essential to our lives and no person deserves to suffer the consequences of malnutrition, no matter what form it takes. To quote, José Andrés "Food is national security. Food is economy. It is employment, energy, history. Food is everything."

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