

## The increase in childhood obesity in the COVID-19 pandemic context in Brazil: A bibliographical review



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### Evely dos Santos Gomes

Undergraduate student in nutrition at the University of the Amazon (UNAMA)

LATTES: <http://lattes.cnpq.br/4490938078442460>

E-mail: [evelygmes10@gmail.com](mailto:evelygmes10@gmail.com)

### Aline Prado dos Santos

Nutritionist. Master's student in Health Sciences at the State University of Londrina (UEL)

LATTES: <https://lattes.cnpq.br/3151462627080195>

E-mail: [pradoaline20@gmail.com](mailto:pradoaline20@gmail.com)

### Camila Barbosa Lima

Graduating in Pharmacy at the University Center of the Amazon (UNIESAMAZ)

LATTES: <https://lattes.cnpq.br/4859906377872829>

E-mail: [camilablimal3@gmail.com](mailto:camilablimal3@gmail.com)

### Camila Barreto Pamplona

Undergraduate student in nutrition at the University of the Amazon (UNAMA)

LATTES: <https://lattes.cnpq.br/0084326745490145>

E-mail: [camillapamplona@hotmail.com](mailto:camillapamplona@hotmail.com)

### Ivone da Silva Alves

Undergraduate student in nutrition at the University of the Amazon (UNAMA)

LATTES: <https://lattes.cnpq.br/7331371320677514>

E-mail: [ivonealves5588@gmail.com](mailto:ivonealves5588@gmail.com)

### Jaily Vanzeler Freitas

Undergraduate student in nutrition at the University of the Amazon (UNAMA)

ORCID: <https://orcid.org/0009-0003-3599-7955>

E-mail: [jailyvanzeler3@gmail.com](mailto:jailyvanzeler3@gmail.com)

### Jessiany Fernanda Reis da Costa

Undergraduate student in Nutrition at the University of the Amazon (UNAMA)

LATTES: <http://lattes.cnpq.br/0277162431480568>

E-mail: [jessianylopez13@gmail.com](mailto:jessianylopez13@gmail.com)

### Natália Furtado Lira

Undergraduate student in nutrition at the University of the Amazon (UNAMA)

LATTES: <http://lattes.cnpq.br/1741600238190114>

E-mail: [nataliaflira7@gmail.com](mailto:nataliaflira7@gmail.com)

### Nívea Furtado Lira

Undergraduate student in nutrition at the University of the Amazon (UNAMA)

LATTES: <http://lattes.cnpq.br/3654603952245596>

E-mail: [niveafurtado105@gmail.com](mailto:niveafurtado105@gmail.com)

### Scarlet Hislayne Tavares Pereira Fonseca

Undergraduate student in nutrition at the University of the Amazon (UNAMA)

LATTES: <https://lattes.cnpq.br/4855840383515599>

E-mail: [scarhislayne@gmail.com](mailto:scarhislayne@gmail.com)

### Wend Maira de Lima Lobato

Undergraduate student in nutrition at the University of the Amazon (UNAMA)

LATTES: <http://lattes.cnpq.br/3257712152000254>

E-mail: [wendlobato@gmail.com](mailto:wendlobato@gmail.com)

### Sarah Camila Fortes Santos

Nutritionist. Specialist in Clinical Nutrition, Metabolism, Practice and Nutritional Therapy, from Faculdade Venda Nova do Imigrante (FAVENI)

LATTES: <http://lattes.cnpq.br/8378427015337893>

E-mail: [sarahsantos113@hotmail.com](mailto:sarahsantos113@hotmail.com)

### ABSTRACT

**INTRODUCTION:** Childhood obesity is characterized as an excess of body fat that causes health problems. Therefore, it is essential to analyze the influence of the Covid-19 pandemic on the increase in pediatric obesity. **OBJECTIVE:** To identify the influence of the implications of the Covid-19 pandemic on the increase in obesity among children, relating it to changes in lifestyle and food consumption resulting from social isolation. **METHODOLOGY:** This work is a bibliographical review. Firstly, a bibliographical search was carried out in the SCIELO, VHL, Periódicos Capes and ResearchGate databases. The second stage was the careful analysis of the work. **RESULTS AND DISCUSSION:** Based on research, an increase in childhood obesity was observed during the pandemic period. Therefore, child health care must be intensified. **CONCLUSION:** Given the above, it is concluded that the implications of the Covid-19 pandemic influenced the increase in pediatric obesity in Brazil.



**Keywords:** Children, Overweight, Pandemic.

## 1 INTRODUCTION

Childhood obesity is characterized as an excess of body fat that causes health problems in individuals in different aspects of the body's functioning. In addition, it is classified as a multifactorial comorbidity that is influenced by physiological, emotional, behavioral, and socioeconomic factors, and is characterized by being a dynamic process that depends on parental attitudes, sedentary lifestyle, nutritional pattern, and family relationships (SOUSA *et al.*, 2020).

In this regard, the implications of the Covid-19 pandemic also impacted the picture of weight gain in children during social isolation, due to mobility restricted to the home, interruption of social activities, greater exposure to screens, and changes in diet, which also affected the reduction in the practice of physical activity (SOUZA *et al.*, 2020). Thus, such measures directly influenced children's diet and lifestyle (KISIELEWSKA, MADO, 2021).

The eating habits of children were also affected by the emotional state resulting from the consequences of the pandemic. Therefore, confinement influenced the increase in the consumption of affective food as a form of comfort during this period (PUJIA *et al.*, 2021), *which directly impacted the emotional compulsion for high-calorie foods, greater consumption of processed and ultra-processed foods, reduction in the intake of fruits and vegetables, and increase in the number of meals in a short period of time* (LIMA *et al.*, 2022).

In addition, the association between the practice of physical activity and improvement in the quality of nutrition are effective habits that contribute to weight control, reduction of visceral fat and risk factors, and improvement of nutritional patterns, which allows the balance of the metabolism of children with obesity (SOUZA *et al.*, 2020).

Therefore, it is essential to analyze the influence of the COVID-19 pandemic on the increase in pediatric obesity in Brazil. Thus, it is necessary to address the consequences, prevention and control strategies, since these aspects are influenced by the child's entire support network, be it the family, the school, the community, as well as health professionals (SOUZA *et al.*, 2020). Addressing this morbidity is of paramount importance for society, as obesity in children can result in serious health consequences in adulthood (VIEIRA *et al.*, 2022).

Therefore, the present study aims to identify the influence of the implications of the Covid-19 pandemic on the increase in obesity among children, relating it to changes in lifestyle and food consumption resulting from social isolation.



## 2 METHODOLOGY

The present work is a literature review. In which it was divided into two stages.

First, a bibliographic search was carried out in the databases of the Scientific Electronic Library Online (SCIELO), Virtual Health Library (VHL), Capes Journals and ResearchGate, published in the period from 2020 to 2022, using as descriptors: "pandemic"; "pediatric obesity"; "COVID-19"; "pediatric obesity"; "pandemic" and "weight gain".

The second stage was the careful analysis of the works, through the reading and classification of those that presented more relevant information about the theme. The inclusion criteria were: complete articles, in Portuguese and English, from 2020 to 2022, referring to the theme.

The exclusion criteria were: incomplete works, in a language other than Portuguese and English, publications prior to the year 2020, as well as works that were not relevant to the theme. From this, 21 articles were found during the bibliographic search, discarding 5 out of context, and 16 works were included in the review.

## 3 RESULTS AND DISCUSSION

From research, an increase in childhood obesity was observed during the pandemic period. As a result, child health care should be intensified, as research indicates that overweight children have a higher risk of developing obesity (SOUZA *et al.*, 2020).

A descriptive study of experience report, carried out with a 7-year-old patient 6 months, in a hospital unit in the municipality of Volta Redonda (RJ), analyzed the consequences of social isolation and abandonment of school activities on the routine of this individual during the covid-19 pandemic. Regarding the physical examination, the BMI value of 25.33 kg/m<sup>2</sup> (obesity) was obtained (SOUZA *et al.*, 2020).

It was observed that the loss of the school's routine had an impact on sleep difficulties and eating patterns, since they ate incorrectly, as they consumed a large amount of food in a single meal, which influenced the development of obesity (PASSOS *et al.*, 2021).

In a study conducted by Pelicciari *et al.*, (2022) with 68 children, it was shown that 38% of females had an increase in body weight of 7.2 kg, as well as 30% of males increased their weight by 10.1 kg, after the beginning of the pandemic. Research has shown that weight gain in both sexes is related to patients' sedentary habits and consumption of high-calorie foods.

A described cross-sectional study conducted by Sá *et al.*, (2020) analyzed how Brazilian families with children under 13 years of age faced the Covid-19 confinement period. The results showed a reduction in the practice of physical activity, and before social distancing, 67.8% of the children were active, but this number was reduced to 9.77%.



The studies conducted by Dunton *et al.*, (2020) show that the increase in weight and obesity in children during the pandemic is not only related to the change in diet, but also to the lack of physical activity, stress, increased screen time, and reduced sleep quality.

Thus, social isolation measures reduced social and outdoor activities, limiting daily energy expenditure, which helps control lean body mass and controlled metabolic profiles (STAVRIDOU *et al.*, 2021; CENA *et al.*, 2021).

A study carried out through a questionnaire, with the guardians of 45 children aged 3 to 10 years, demonstrated the influence of the pandemic on the lifestyle and meal routine of families. According to the results obtained, a reduction in the quality of habits was observed in 23.4%, while only 6.4% showed improvement. In addition, in this survey, the food groups with the highest increase in consumption were delivery (36.2%), homemade fried foods (27.7%), sweet snacks (12.8%), savory snacks (25.5%) and soft drinks (23.4%) (RAMOS, 2021).

Campagnaro *et al.*, (2020), showed in their research that 61.5% of families with children reported changes in eating habits during the pandemic period, of which only 33.1% chose to consume healthier foods.

However, another study conducted with 1,516 respondents, with or without children, pointed out that 54% of these individuals reported an increase in the consumption of ultra-processed foods, such as soft drinks *and fast food*, as well as almost 50% said they had reduced their consumption of fruits and vegetables (UNICEF, 2020).

This fact represents that this dietary pattern causes damage to the healthy growth and development of the child, because the composition of these foods is of low nutritional value, and a healthy diet should be based on *fresh* and minimally processed foods, followed by the limitation of processed and ultra-processed foods. An adequate diet provides the intake of all food groups that are safe and essential for the proper functioning of the body (OLIVEIRA *et al.*, 2021).

#### 4 CONCLUSION

In view of the above, it is concluded that the implications of the Covid-19 pandemic influenced the increase in pediatric obesity in Brazil. Thus, due to social isolation during the pandemic period, a change in the standard of living and eating of children was observed, which directly impacted the child's health condition.

Thus, it is of paramount importance to promote strategies that help reduce the impacts of obesity on children's health, given that nutrition and adequate lifestyle habits are necessary factors for the healthy growth and development of children, reducing the possibility of health problems in adulthood.



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