REVIEW ARTICLE

Child undernutrition in Brazil: the wound that never healed

Maria Paula de Albuquerque ⓘ *, Paola Micheloni Elvira Ibelli ⓘ , Ana Lydia Sawaya ⓘ

Centro de Recuperação e Educação Nutricional, São Paulo, SP, Brazil

Abstract
Objective: To describe the scenario of child undernutrition in Brazil and its determinants.
Data source: Narrative review of the literature with inclusion of data from population surveys, surveillance and monitoring systems, and active search in favelas and underserved communities carried out by CREN.
Data synthesis: Household surveys carried out from 1974 to 2019 indicate that undernutrition (<5 years) decreased until 2006. Underweight (W/A $\leq$-2 Z) and stunting (H/A $\leq$-2 Z) showed a decrease of 17% to 3% and 37% to 7%, respectively. After 2006, there was an increase in underweight of 53% and 76% for wasting (BMI/$A \leq$-2 Z), with the prevalence of stunting being stagnant at around 7%. Active search data in favelas and underserved communities show that the prevalence of stunting is 11% in those <5 years. In 2021, 30% of the population lived in poverty, 73% of which were black or brown. Stunting in black and brown children <5 years old is, respectively, 9% and 12% higher when compared to white children. Poverty decreased between 2012 and 2015 (27 to 25%), but increased again (2016=26% to 2021=30%), in parallel with food insecurity, which decreased between 2004 and 2013 (12% to 6%), but reached its worst level in the historical series (2022:15%).
Conclusion: Despite advances, Brazil's social protection system was not able to reduce inequalities and the reversal of the trend towards decreasing child undernutrition could be observed from 2006 onwards.
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Introduction

Child undernutrition represents an important public health problem in low- and middle-income countries and its acute condition, characterized by being underweight, with a body mass index for age (BMI/A) ≤ -2 z-score, is associated with half of deaths of children under 5 years of age worldwide.[1] Its chronic condition, characterized by short stature associated with poverty, with a height-for-age index (H/A) ≤ -2 z-score, is the most prevalent form of undernutrition and is associated with a 4.8-fold increase in the chance of death from preventable causes.[2] Stunting, in addition, to bring the best indicator of children's general

* Corresponding author.
E-mail: saude_vm@cren.org.br (M.P. de Albuquerque).

well-being, is an accurate reflection of the social inequalities in which they live.[3]

When it occurs early in life, undernutrition can cause irreversible damage to cognitive development, in addition to increasing the chance of obesity and chronic non-communicable diseases in adulthood. Therefore, child undernutrition has consequences throughout the entire life cycle, and at an individual and collective level, generating important social and economic impacts, in a trajectory of intergenerational perpetuation of poverty and undernutrition.[4,5]

The determinants of primary child undernutrition are multifactorial, with deep roots in poverty,[6] of which the main ones are: food and nutrition insecurity; low weight at birth; low maternal level of schooling; lack of access to water, sanitation and health services; maternal stunting and underweight.[7,3]

In Brazil, despite the advances attained with investments in health, education and social income distribution programs, social inequality remains high and keeps the country among the most unequal worldwide.[8] With the political crises of the first two decades of the 2000s, the freezing of resources for social programs and the advent of the COVID-19 pandemic, poverty worsened in Brazil and undernutrition and hunger returned to the debate table.[9,10]

This study aimed to review the historical series of the prevalence of child undernutrition in Brazil, as well as some of its determinants. Moreover, it sought to elucidate the singularities of the most vulnerable groups, which are sometimes made invisible by national averages.

Methods

This was a narrative review of the literature using the following descriptors in the search strategy: child undernutrition, stunting, wasting, underweight, poverty, social inequality and food insecurity in the PubMed and SciELO databases. Articles that addressed child undernutrition in Brazil, with data on prevalence, impacts or determinants of child undernutrition and those on structural poverty or social inequality in Brazil were selected.

Population-based household surveys were used to represent the historical series of the prevalence of child undernutrition, namely: National Family Expenditure Study — ENDEF (*Estudo Nacional de Despesa Familiar*) 1974—1975;[11] National Survey on Health and Nutrition - PNSN (*Pesquisa Nacional sobre Saúde e Nutrição*) 1989;[12] National Survey on Demography and Health - PNDS (*Pesquisa Nacional sobre Demografia e Saúde*) 1996;[13] National Survey of Demography and Health of Children and Women — PNDS (*Pesquisa Nacional de Demografia e Saúde da Criança e da Mulher*) 2006;[14] Family Budget Survey - POF (*Pesquisa de Orçamentos Familiares*) 2002;[15] and National Survey of Food and Child Nutrition - ENANI (*Estudo Nacional de Alimentação e Nutrição Infantil*) 2019.[16] The studies used similar methods to assess nutritional status, with the diagnosis of underweight, wasting or stunting being carried out according to the recommendations of the World Health Organization (WHO), considering 2 (two) standard deviations from the median weight for age (W/A), body mass index (BMI) for age (BMI/A) or height for age (H/A).

Data from public reports from the Food and Nutrition Surveillance System — SISVAN (*Sistema de Vigilância Alimentar e Nutricional*)[17] were also used to represent the prevalence and temporal trend of child undernutrition in the country.

Active search data from the Center for Nutritional Recovery and Education — CREN (*Centro de Recuperação e Educação Nutricional*), carried out through coordination with territories and local leaders, were included to represent the prevalence of child undernutrition in favelas and underserved communities in the city of São Paulo, where children in more serious situations of vulnerability experience gaps in care and generally do not reach health services or do not remain under treatment.

To describe the historical series of poverty in Brazil, studies and databases were used that considered national and international poverty lines, namely: *Programa Auxílio Brasil* (R$ 105.00 to 210.00 per month per person); Fundação Getúlio Vargas - FGV (US$ 5.0 per day per person); United Nations Economic Commission for Latin America and the Caribbean - CEPAL (US$2.00 per day per person); and World Bank (R$499.00 per month per person).

Population-based household surveys were also used to represent the historical series of food insecurity, namely: National Household Sample Survey - PNAD (*Pesquisa Nacional por Amostra de Domicílios*) 2003—2004, 2008—2009 and 2013—2014; Family Budget Survey — POF (*Pesquisa de Orçamentos Familiares*) 2017—2018; I and II Population Food and Nutrition Security Survey - VIGISSAN (*Inquérito Populacional de Segurança Alimentar e Nutricional*) 2020 and 2021—2022.[18] The studies assessed food security and mild, moderate or severe food insecurity using the Brazilian Food Insecurity Scale (EBIA, *Escala Brasileira de Insegurança Alimentar*).
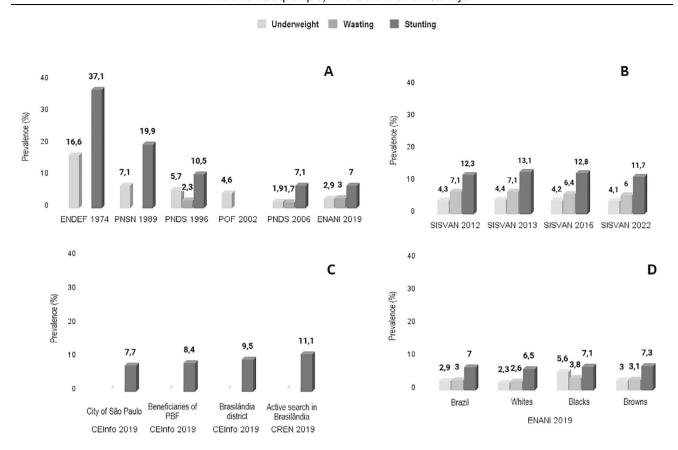
Data from the National Sanitation Information System - SNIS (*Sistema Nacional de Informações sobre Saneamento*) and studies carried out with data from the Demographic Census of the Brazilian Institute of Geography and Statistics (IBGE, *Instituto Brasileiro de Geografia e Estatística*) were used to investigate the history of basic sanitation coverage.

Reports from the United Nations Interagency Group for Child Mortality Estimation (UN IGME), studies with data from the Mortality Information System — SIM (*Sistema de Informações sobre Mortalidade*), the Information Technology Department of the Unified Health System - Datasus (*Departamento de Informática do Sistema Único de Saúde*) and *Observatório de Saúde da Infância da Fundação Oswaldo Cruz* - Fiocruz, were used to record the history of the child mortality rate and the current record of hospitalizations for undernutrition in children under one year of age in Brazil.

Results and discussion

Evolution of the prevalence and racial characteristics of child undernutrition in Brazil

Brazilian population-based household surveys carried out from 1974 to 2019 indicate that undernutrition in children under 5 years of age showed a large decrease until 2006 (Figure 1A). During this period, underweight, characterized by the weight-for-age index (W/A $\leq$ −2 z-score) showed a very significant decrease (16.6—2.9%); with stunting (H/A $\leq$ −2 z-score) decreasing even more (37.1—7%). However, after 2006 it is possible to observe an increase in the

Underweight: W/A ≤ -2; wasting: W/H or BMI/A ≤ -2; stunting: H/A ≤ -2 z-score . PBF: *Bolsa Família* Program (conditional cash transfer programme).

National Family Expenditure Study − ENDEF (Estudo Nacional de Despesa Familiar) 1974−1975; National Survey on Health and Nutrition - PNSN (Pesquisa Nacional sobre Saúde e Nutrição) 1989; National Survey on Demography and Health - PNDS (Pesquisa Nacional sobre Demografia e Saúde) 1996; Family Budget Survey - POF (Pesquisa de Orçamentos Familiares) 2002; National Survey of Demography and Health of Children and Women − PNDS (Pesquisa Nacional de Demografia e Saúde da Criança e da Mulher) 2006; National Survey of Food and Child Nutrition - ENANI (Estudo Nacional de Alimentação e Nutrição Infantil) 2019; Food and Nutrition Surveillance System − SISVAN (Sistema de Vigilância Alimentar e Nutricional), national public access report. CEInfo - Epidemiology and Information Coordination of the São Paulo Municipal Health Department (Coordenação de Epidemiologia e Informação da Secretaria Municipal de Saúde de São Paulo); Center for Nutritional Recovery and Education − CREN (Centro de Recuperação e Educação Nutricional) 2019 (author database).

Figure 1 A. Prevalence of underweight, wasting and stunting in children aged <5 years in Brazilian population surveys (Brazil, 1974 to 2019); B. Trend of underweight, wasting and stunting in children aged <5 years in Brazil according to public reports from SISVAN (Brazil, 2012−2022); C. Prevalence of stunting in children aged <5 years in the city of São Paulo: CEInfo/SMS/SP comparison with active search by CREN (São Paulo, 2019); D. Prevalence of underweight, wasting and stunting in children aged <5 years according to skin color/ethnicity (Brazil, 2019).

prevalence of underweight by 52.6% and wasting by 76.4%, with stagnation in the prevalence of stunting (calculated from Figure 1A). When compared with SISVAN data (Figure 1B), even higher prevalences of wasting and stunting are observed, most likely due to differences in the data collection methods.

Specific data from the city of São Paulo indicate different prevalence rates of child undernutrition depending on the region of the city and the data collection method, with much higher prevalences being observed when actively searching for malnourished children in regions of greater vulnerability and with gaps in care, through surveys and collective efforts directly in the community, such as the that carried out by the Nutritional Recovery and Education Center − CREN (Figure 1C). Additionally, data from CREN and the Municipal Health Department of São Paulo indicate that,

in children living in favelas and underserved communities, stunting and the risk of being stunted (H/A ≤−1 z-score) can affect 25% of children under 5 years of age,[19] and that children who benefit from the *Bolsa Família* (cash transfer) Program have a 12% higher prevalence of stunting when compared to non-beneficiary children.[20]

According to data from the Municipal Health Department, the prevalence of stunting in children under 5 years of age in the second district with the highest proportion of favelas and underserved communities in the city of São Paulo (Brasilândia)[21] was among the highest percentages in the municipality, reaching 9.5% in 2019. Using the active search method, in that same year and district, CREN found an even higher prevalence: 11.1%.

Other studies also observed a higher risk of undernutrition in economically disadvantaged children (class D)[22] and

in federative units of medium and high social vulnerability (relative risk of 1.17 and 1.39, respectively, compared to places of low social vulnerability), based on the multidimensional analysis of the economic situation (urban infrastructure, human capital, income and work).[23]

Regarding differences in ethnicity and skin color, the last population survey showed that the prevalence of stunting among black and brown children under 5 years of age is, respectively, 9.2% and 12.3% higher when compared to white children (calculated from prevalence data in Figure 1D). In relation to underweight and wasting, this difference is even greater, with much higher prevalence rates in black children and intermediate values in brown children (Figure 1D). Data from the city of São Paulo also indicate an 8.1% higher prevalence of stunting in black, brown and indigenous children under 5 years of age, when compared to white children.[20]

A study of temporal trends based on data from SISVAN showed that among children from more vulnerable subgroups (blacks, beneficiaries of conditional cash transfers and residents of undeserved areas), the trend toward a higher prevalence of stunting persists.[24]

Another study that analyzed the temporal trend of undernutrition in infants (0 to 23 months) and preschool children (24 to 59 months) assisted by the *Bolsa Família* Program (PBF) in Brazil using data from SISVAN from 2008 to 2019, concluded that there was a reduction in undernutrition prevalence until mid-2013 (2 to 4% per year) when trends became stationary for preschoolers (1 to 4% per year) and increased for infants (3 to 8% per year).[23]

SISVAN is an excellent monitoring tool and provides a method for rapid and permanent assessment of food consumption patterns and nutritional status; however, it is underutilized in the studied country. The system average coverage for the Brazilian population in 2008 was just 4.7%. A study carried out in Belo Horizonte, state of Minas Gerais, shows that, for children under 5 years of age, the average SISVAN coverage was only 5.6%, varying from 0.5% to 35.8% between municipalities in 2018.[25]

The few studies that analyzed the temporal trend of SISVAN data indicate trends of higher prevalence of child undernutrition among black people, beneficiaries of conditional cash transfer programs and residents of underserved areas. These studies concluded that as of mid-2013, child undernutrition in Brazil increased again among infants and plateaued among preschoolers.[23,24]

Disparities in child undernutrition by age group

According to data from the National Survey of Food and Child Nutrition - ENANI, in children under 5 years of age, the highest prevalence of stunting is found in the age groups from 0 to 11 months and from 12 to 23 months, where the percentage reaches 9% and 10.2%, respectively. Wasting also shows a higher prevalence among children aged 0 to 11 months (5%), when compared to other age groups up to 5 years old (3%).[16]

Data from the Municipal Health Secretariat indicate that in the city of São Paulo, the prevalence of stunting in children under 5 years of age in 2019 was 7.7%, and among children aged 18 to 24 months, 10.4%.[20] CREN data collected through active searches carried out in favelas and underserved communities also indicate a higher prevalence of

stunting among children aged 0 to 11 months and 12 to 23 months, 17.8% and 20.9%, respectively (author's database).

Global target to reduce child undernutrition

Among the WHO global targets established in 2012 to reduce child undernutrition is to reduce the number of children under 5 years of age with undernutrition by 40% by 2025.[26] However, the trend of this indicator in Brazil over the last 10 years shows stagnation, as demonstrated by the SISVAN data illustrated in Figure 1, showing that we are far from reaching the global target established for the 2012—2025 period.

Considering data from the last national survey,[16] to achieve the global target of reducing child undernutrition, Brazil would need to reach the following prevalence rates among children under 5 years of age: 1.74% of underweight; 1.8% of wasting and 4.9% of stunting.

Determinants of child undernutrition

Poverty and income concentration

Although national and international poverty lines adopt different cutoff points, they all point out that poverty in Brazil, one of the main determinants of primary child undernutrition, showed a reduction or stagnation until 2014, when it increased again with the established political and economic crises (Figure 2A and B). In 2020, the emergency expansion of cash transfers caused poverty to decline for the first time in many years. However, in 2021, with the prolongation of the COVID-19 pandemic and with a lower volume of cash transfers, the poverty level in Brazil reached the worst level in the historical series and extreme poverty returned to the level of the 2000s.[27]
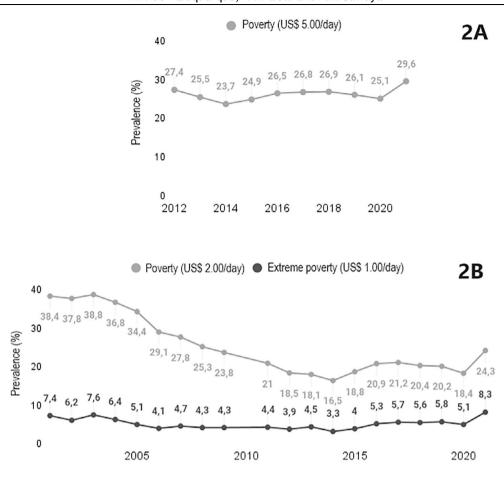
Between 2001 and 2021, it can be observed that poverty decreased by 58%, but extreme poverty increased by 12.2%. The best level was reached in 2014, when poverty increased again and extreme poverty reached the worst level in the historical series, affecting 8 out of every 100 Brazilians (Figure 2B).

Poverty is directly associated with racial issues, a mark of inequalities that have persisted since the days of colonial and slave-owning Brazil. In 2022, 73% of people in poverty in Brazil declared themselves to be black or brown, with 3 in 10 people living in poverty in the country being black women living in urban areas and 63% of people living in favelas and underserved communities being black or brown.[28,19]

Among the *quilombola* and indigenous populations, 73% and 79%, respectively, were in the extreme poverty range (R$178/month) and 91% and 96% were in the poverty range (R$499/month) in 2019.[28]

Regarding income concentration, Brazil continues to be one of the most unequal countries in the world, with a high concentration of income in 1% of the population and with the richest 10% concentrating around 59% of total national income.[8]

Data from the World Bank also indicate that, between 2012 and 2019, the profile of people in chronic poverty, with monetary and non-monetary deprivation (low access to health services, poor quality housing and low accumulation of human capital), consisted mostly of Afro-Brazilians. During this period, the percentage of black and brown people in chronic poverty increased from 71.7% to 74.8%.[28]

Figure 2 (A) Poverty (US$ 5.00/day) — 2A

Values shown: 27,4 25,5 23,7 24,9 26,5 26,8 26,9 26,1 25,1 29,6 (years 2012–2020)

Figure 2 (B) Poverty (US$ 2.00/day) ● Extreme poverty (US$ 1.00/day) — 2B

Poverty values: 38,4 37,8 38,8 36,8 34,4 29,1 27,8 25,3 23,8 21 18,5 18,1 16,5 18,8 20,9 21,2 20,4 20,2 18,4 24,3

Extreme poverty values: 7,4 6,2 7,6 6,4 5,1 4,1 4,7 4,3 4,3 4,4 3,9 4,5 3,3 4 5,3 5,7 5,6 5,8 5,1 8,3

Sources: 2A. Neri M. Mapa da Nova Pobreza. FGV Social. 2022;1(1):1-40. 2B. CEPAL - Comisión Económica para América Latina y el Caribe. Bases de Datos y Publicaciones Estadísticas: Pobreza 2023. [Cited 2023 Ago 04]. Available from: https://www.cepal.org/es/

Figure 2 A. Historical series of people in poverty in Brazil considering the line below US$5.50/day (Brazil, 2012 to 2020); B. Historical series of the prevalence of poverty and extreme poverty in Brazil considering the lines below US$2.00 and US$1.00/day, respectively (Brazil, 2001 to 2021).

According to Souza,[10] despite the optimism of reducing inequalities indicated by household surveys, data based on Personal Income Tax (IRPF) declarations demonstrate the maintenance of the high concentration of income in Brazil and the underestimation of the income of the richest people in sample surveys. The author states that democracy in Brazil served more to contain the increase in inequality in Brazil than to reduce it.

The World Bank also points out that, despite advances in income distribution, the social protection strategies used in Brazil were not able to effectively serve as a countercyclical protection system, that is, stable during crises and government changes, and that the structural poverty and few possibilities for social mobility persist.[28]
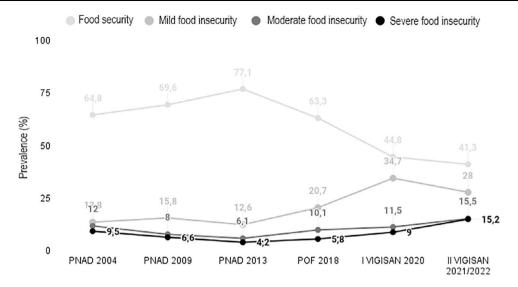
Food insecurity
Despite the advances in food security highlighted in household surveys in 2004, 2009 and 2013, after this period a very disturbing scenario was observed (Figure 3). Between 2013 and 2022, hunger increased by 262%, reaching the worst level in the historical series, and food insecurity, in all its forms, increased by 156% (data calculated from Figure 3). In 2022, only 4 in 10 Brazilians had food security.[18]

Basic sanitation
Basic sanitation (water supply, sewage and garbage collection) is one of the factors most frequently associated with child undernutrition. A systematic review with meta-analysis concluded that children who live in homes without basic sanitation conditions and with open sewage are 10 percentage points or 29 to 46% more likely to have stunting.[29]

A study carried out with data from the IBGE Demographic Census of 2000 and 2010 showed that, in general, the percentage of basic sanitation in Brazilian households improved during this period. However, regional and skin color/ethnicity disparities still persist, with lower prevalence rates of access in rural areas and among indigenous, black and brown people.[30]

The most recent data from the National Sanitation Information System - SNIS for 2021 shows that the percentage of sewage collection in Brazil is 60.24%, of which 80.84% is treated and 51.17% is treated for consumption. The worst Brazilian scenario is in the North region, where only 22.96% of sewage is collected, followed by the Northeast, with 39.27%. Regarding water supply, the national coverage is 84.2%. However, the disparity between macro-regions repeats itself: 59.97% in the North, 74.72% in the Northeast,

Figure 3 data labels:

Food security: 64,8 / 69,6 / 77,1 / 63,3 / 44,8 / 41,3

Mild food insecurity: 12,3 / 15,8 / 12,6 / 20,7 / 34,7 / 28

Moderate food insecurity: 8 / 6,1 / 10,1 / 11,5 / 15,5

Severe food insecurity: 9,5 / 6,6 / 4,2 / 5,8 / 9 / 15,2

X-axis: PNAD 2004, PNAD 2009, PNAD 2013, POF 2018, I VIGISAN 2020, II VIGISAN 2021/2022

National Household Sample Survey - PNAD (Pesquisa Nacional por Amostra de Domicílios) 2003−2004, 2008−2009 and 2013−2014; Family Budget Survey – POF (Pesquisa de Orçamentos Familiares) 2017−2018; I and II Population Food and Nutrition Security Survey - VIGISSAN (Inquérito Populacional de Segurança Alimentar e Nutricional) 2020 and 2021−2022

Figure 3 Historical series of the prevalence of people experiencing food security and mild, moderate or severe food insecurity (Brazil, 2004 to 2022).

89.88% in the Midwest, 91.53% in the Southeast and 91.35% in the South region.[31]
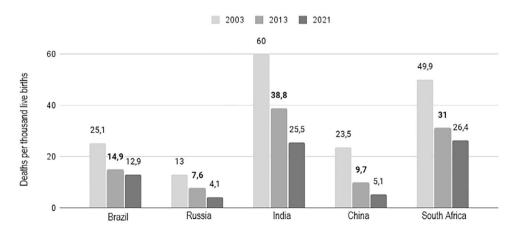
History of child mortality and hospitalizations due to undernutrition

When analyzing the history of child mortality in Brazil, one of the main indicators of health and economic development, a great decrease can be observed between 1980 and 2010, and since then the rate has plateaued, at around 13.5 deaths per thousand live births.[32]

When considering the infant mortality rates (Figure 4) of the emerging countries that make up the BRICS nations, created in 2006 and which include Brazil, Russia, India, China, and South Africa, the percentage of reduction in the child mortality rate in Brazil (48.6%) between 2003 and 2021 was the second lowest among the BRICS countries, behind India (57.5%), Russia (68.5%) and China (78.3%).[33]

Regarding mortality due to undernutrition in children under 5 years of age, an ecological study carried out with data from the Mortality Information System - SIM, from the Information Technology Department of the Unified Health System - Datasus, showed a rate reduction between the period 2003−2007 and 2013−2016, which went from 17.2% to 5.2%.[34] More recent data from *Observatório de Saúde da Infância da Fundação Oswaldo Cruz* - Fiocruz, indicate that in 2022 Brazil recorded the worst level of hospitalizations of children under one year of age due to undernutrition in the last 13 years.[35]

Figure 4 data (2003, 2013, 2021):

Brazil: 25,1 / 14,9 / 12,9

Russia: 13 / 7,6 / 4,1

India: 60 / 38,8 / 25,5

China: 23,5 / 9,7 / 5,1

South Africa: 49,9 / 31 / 26,4

Adapted from United Nations Inter-agency Group for Child Mortality Estimation (UN IGME) [33]

Figure 4 Evolution of the child mortality rates in BRICS countries (2003 to 2021).

Final discussion

The present study showed a lag in data on the prevalence of child undernutrition in Brazil. Population-based household surveys took place over a long period of time and showed results on the nutritional status of children only in 1974, 1989, 1996, 2002, 2006, and 2019, with wasting being diagnosed only in the 1996 survey, while in the 2002 survey, only underweight data were considered. Lagging data make it difficult to compare historical nutritional status, as well as possible correlations with its determinants.

Moreover, household surveys have the set of private households as the research population and exclude indigenous people who live in reservations, homeless people, foreigners living in households where the Portuguese language is not spoken, and those with any condition that prevented anthropometry from being carried out. and residents of collective homes (orphanages, boarding houses, etc.).[16] Therefore, data on nutritional status and food insecurity may be underestimated.

It is also worth highlighting that the data presented in the last household survey are prior to the COVID-19 pandemic period, indicating that the current scenario may surpass the scenario found in 2019. Data from the World Bank indicate that, with the COVID-19 pandemic, the poverty situation in Brazil reached even worse prevalence rates than in 2000 and informal work surpassed that seen in 2012.[28]

Although the few studies on temporal trends indicate that the reversal of the trend towards reducing child undernutrition in Brazil occurred in mid-2013, when Brazil entered a technical and political recession with several macroeconomic imbalances, extreme poverty and mild food insecurity were already showing warning signs since 2006. The situation worsened in 2016 with the freezing of public spending established by Constitutional Amendment 95,[36] which affected primary spending on health, education, social assistance, culture, sports, and national defense, among others, and by 2025 it is estimated that this situation could leave 20 million people without due assistance during this period.[37]

The trajectories of primary child undernutrition determinants assessed in this review indicate that Brazil has plateaued or worsened in the last 10 years. The most recent prevalence data indicate an increase in acute undernutrition (wasting) in 2019 and a stagnation in the prevalence of chronic undernutrition (stunting) for more than 10 years.[16]

According to Monteiro et al.,[38] the reduction in child undernutrition between 1996 and 2006 can be attributed 25.7% to improvements in maternal education, 21.7% to the increase in family purchasing power, 11.6% to the expansion of health care and 4.3% to improvements in basic sanitation conditions. Another study also demonstrated a significant association between coverage of the *Bolsa Família* Program (PBF) and the Family Health Program (PSF, *Programa Saúde da Família*) with the reduction in infant mortality between 2004 and 2009.[39]

According to projections, if Brazil had intensified public policies aimed at increasing the purchasing power of the poorest and access to essential services such as education, health, and sanitation, the prevalence of children under 5 years of age with stunting would have reached less than 3% in 2017, ceasing to be a public health problem since that year.[38]

Conclusion

Population-based household surveys tend to underestimate the real scenario of child undernutrition in Brazil because they do not consider groups with greater vulnerability when designing the study population. The 13-year interval between the last and penultimate surveys makes it difficult to compare the periods but indicates an increase in the prevalence of undernutrition from 2006 onwards, which is confirmed by studies of temporal trends with data from SISVAN, indicating an increase from mid-2013 onwards. Furthermore, the presented data are prior to the COVID-19 pandemic period, indicating that the current scenario may surpass the data collected by the last household survey.

Despite advances since the 1980s, Brazil's fragile social protection system has not been able to reduce social inequalities throughout history, but only to contain them temporarily. The reversal of the trend toward reducing child undernutrition has been accompanied by an increase in poverty and inequality.

Faced with the scenario of spending freezes for a social security system that was not even properly constituted, in 2019 the authors observed that hunger, food insecurity, extreme poverty, and acute undernutrition (wasting) in children under 5 years of age reached the worst levels in the historical series. Moreover, child mortality has not shown a significant reduction since 2015 and basic sanitation is progressing at a slow pace, maintaining large regional disparities.

Conflicts of interest

The authors declare no conflicts of interest.

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