CHARACTERIZING HUNGER IN BRAZIL: IMPACT OF PROTEIN-ENERGY MALNUTRITION ACCORDING TO GBD COMPARE TOOL

AGATHA PICETTI GONÇALVES DA SILVA[1], LUÍSA TEIXEIRA FRANCISCO E GONTIJO[2], MARIANA PRESOT ELIAS[2], FABIANA CHAGAS OLIVEIRA DE FRANÇA[3]

1 Nurse. Resident in Primary Care Attention at Escola de Saúde Pública do Rio Grande do Sul (ESP/RS)
2 Medical Student at Centro Universitário de Belo Horizonte (UNIBH)
3 Nutricionist. Professor at Faculdade AGES de Jacobina

INTRODUCTION

Protein-energy malnutrition (PEM) is a clinical-social disease and can be characterized as an imbalance between the supply of energy and nutrients and the need for these for growth and maintenance of body physiology. [2]

To gather data on the real scenario of the prevalence and severity of PEM in Brazil, this study used the platform GBD Compare, launched by the Global Burden of Disease study, which uses variate data and studies through international cooperation aiming the survey of mortality, invalidity and other rates, and allows the visualization of global data concerning diseases and their risk factors.

METHODS

Historical study about the evolution of PEM in Brazil from 1990 to 2019. Data were collected from the GBD Compare tool, including prevalence, deaths and Disability-Adjusted Life Years (DALYs) of Brazil, its states and regions, through the years 1990, 2000, 2010 and 2019.

RESULTS AND DISCUSSION

It is possible to observe, in table 1, the reduction of the rates of PEM through the years, on average of 6,2% every 10 years in all ages, totalizing 17,5% of shrinkage, and a 3% every 10 years in children under five years-old, totalizing 8,8%. However, in 2019, 3,1% of the population under five years-old suffered from malnutrition, which could represent up to 380.000 children living with the most severe level of hunger.

Table 1: Prevalence of PEM in all ages and in children under five years-old in Brazil from 1990 to 2019 per 100.000.

	<5 years				All ages			
	1990	2000	2010	2019	1990	2000	2010	2019
Brazil	3396,92	3279,29	3196,38	3099,05	762,01	706,29	660,85	628,4

Despite the decrease in the prevalence of PEM, disparities between the regions are alarming. While the South region had a reduction of 12%, the Northeast region had 2%, for children under five years-old. The comparisons between states for children under five years-old and for all ages are presented in figures 1 and 2, respectively.

Figure 1: Prevalence of PEM in children <5 years by Brazilian regions between 1990 and 2019 per 100.000.
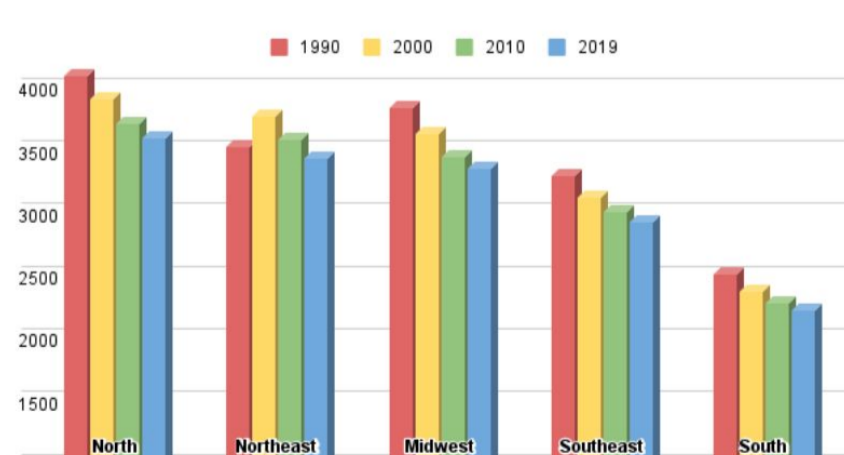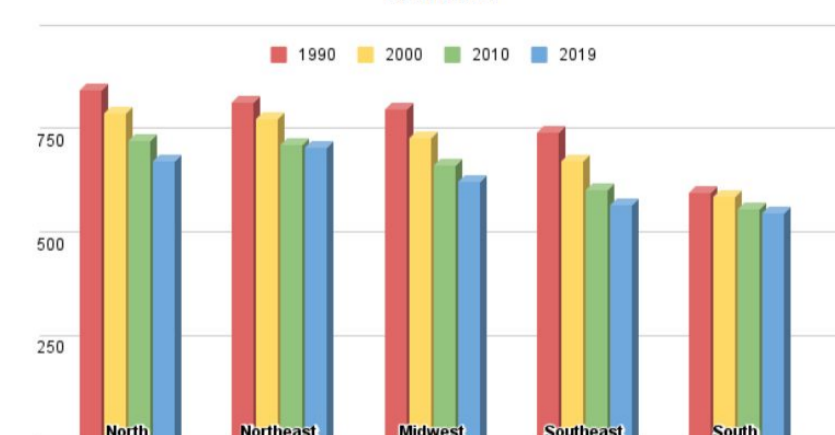

Figure 2: Prevalence of PEM in all ages by Brazilian regions between 1990 and 2019 per 100.000.

As for DALYs, PEM rates can be found in table 2. Like prevalence rates, it is possible to note the reduction of DALYs through the years. From 1990 to 2019, the reduction corresponded to 90.64% for children under five years-old, and 85,6% for all ages. As DALYs represent the sum of years of life lost due to premature mortality and years lived with disability due to the disease, we observe improvements in Brazilians' quality and duration of life, but losses - of lives and of lifetime - are still high.

Table 2: DALYs for PEM in all ages and in children <5 years in Brazil between 1990 and 2019 per 100.000.

	<5 years				All ages			
	1990	2000	2010	2019	1990	2000	2010	2019
Brazil	5752,99	3315,6	1082,79	538,62	751,51	404,01	166,48	108,27

Regarding deaths due to PEM, table 3 unites the collected date. It is possible to observe the reduction of deaths, especially between the years of 1990, 2000 and 2010 in children under five years-old. Also, in 1990 PEM was the seventh cause of death in children under five years-old, while in 2019 it occupied the 12th place in the ranking.

Table 3: Deaths due to PEM in children <5 five years and in all ages by region through 1990 to 2019 per 100.000.

	<5				All ages			
	1990	2000	2010	2019	1990	2000	2010	2019
Brasil	64,94	37,22	11,89	5,74	10,48	6,79	4,16	3,53
North	37,93	28,85	13,22	8,05	6,60	4,97	2,91	2,47
Northeast	116,29	71,34	21,14	8,61	18,76	11,53	5,57	4,09
Midwest	22,53	16,15	6,84	4,66	4,52	3,79	2,74	2,56
Southeast	51,01	18,59	5,74	3,49	9,29	5,74	4,24	3,90
South	23,23	11,35	4,34	2,69	4,10	3,08	2,45	2,48

Between all ages, PEM is not so relevant but has been reduced in great scales, evolving from 16th in the ranking in 1990, to 43rd in 2019. This demonstrates the importance in concentrating efforts to avoid PEM in children, as they're more vulnerable to the consequences of hunger.

Food insecurity is multifactorial, but studies show that family income is the most relevant in determining hunger.[1] Some of the factors pointed out in studies that intensify food insecurity are less possession of consumer goods, unemployment and low education, all directly related to the socioeconomic level of the family.[3]

Specific programs that aim to reduce PEM were essential in the dropping rates presented in the study. Between 2004 and 2009 there was a significant drop in food insecurity in Brazil, moment that coincides with the implementation of specific policies for this purpose, such as Zero Hunger Strategy and redistribution policies, like Bolsa Família, and the appreciation of the minimum wage and reduction of unemployment.[6] However, it is important to emphasize that these programs are not able to attack the cause of hunger. The great land concentration and the focus on the production of commodities for export contribute to the unreachement of sovereignty.[5]

CONCLUSIONS

The data showed that the situation of malnutrition in Brazil has decreased over the years. This drop can be associated with the creation of specific policies to fight hunger and income distribution in the country. However, it is clear that the cut in these policies results in a new increase of hunger in the country, once the structural cause of food insecurity has not been removed.

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