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## ANALYSIS OF PSORIASIS MORTALITY IN BRAZIL OVER THE LAST 25 YEARS

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***Leticia Da Costa Santana Silva***

Universidade de Taubaté – Medicina -  
Taubaté, São Paulo, Brasil

<https://orcid.org/0009-0009-4200-9760>

***Luana Yasmim Fernández Avelaneda  
Castanheira***

Universidade de Taubaté – Medicina -  
Taubaté, São Paulo, Brasil

<https://orcid.org/0009-0008-8476-2999>

***Manuella de Azevedo Paiva***

Universidade de Taubaté – Medicina -  
Taubaté, São Paulo, Brasil

<https://orcid.org/0009-0001-5791-4757>

***Júlia Bitencourt Ribeiro***

Universidade de Taubaté – Medicina -  
Taubaté, São Paulo, Brasil

<https://orcid.org/0000-0001-7696-7400>

***Ohara Rumayane Paiva Santos Rebouças***

Universidade de Taubaté – Medicina -  
Taubaté, São Paulo, Brasil

<https://orcid.org/0009-0006-8339-7462>

***Ana Júlia de Araújo Machado Gonçalves***

Universidade de Taubaté – Medicina -  
Taubaté, São Paulo, Brasil

<https://orcid.org/0009-0009-3643-8059>

***Flávia Regina Ferreira***

Universidade de Taubaté – Medicina -  
Taubaté, São Paulo, Brasil

<https://orcid.org/0000-0001-5679-4282>

***Beatriz Borusiewicz Tavares Ferreira Leite***

Universidade de Taubaté – Medicina -  
Taubaté, São Paulo, Brasil

<https://orcid.org/0009-0002-1927-8224>

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**Abstract:** Psoriasis is a multifactorial systemic inflammatory disease with a chronic course. The disease affects between 2 and 5% of the world's population, distributed equally between the sexes, and is most prevalent between the second and fourth decades of life. The lesions are accompanied by pain and itching, as well as emotional weakness, favoring the development of stress and/or depression. Thus, the aim of this study is to draw up an epidemiological profile of psoriasis mortality in Brazil over the last 25 years, helping to redirect control actions, provide a scientific basis, improve quality of life and make public control policies and population education effective in terms of early recognition. This is a retrospective exploratory epidemiological study of a descriptive nature which used data obtained from the Mortality Information System (SIM), available on the website of the Department of Informatics of the Unified Health System (DATASUS). The results obtained in this study showed a total of 729 deaths from psoriasis in Brazil between 1999 and 2023, with the southeast region being the most affected, accounting for 354 cases (48.56%). This data highlights a public health problem in relation to the propaedeutics and follow-up of patients with the disease in order to avoid such an outcome. In addition, it can be inferred that the mortality profile for psoriasis over the last 25 years in Brazil is male, white, in the sixth decade of life and living in the southeast of the country. This scenario highlights the need to adapt strategies to increase information about the disease and its treatment, with the aim of reducing the number of cases with complications resulting from the disease.

**Keywords:** Psoriasis; Epidemiology; Public Health.

## INTRODUCTION

Designated as an inflammatory disease of multifactorial origin, psoriasis has a chronic and systemic evolution. This fact corroborates the fact that even though it is related to incurable diseases, it does have certain treatments.<sup>1</sup> It affects both skin and joints, is immune-mediated, genetically based (mainly in those favored by environmental and autoimmune factors) and has various clinical presentations.<sup>3</sup>

The pathophysiology focuses on cellular dysfunction with an inflammatory condition in the form of vulgar or scaly erythematous plaques, with defined or undefined borders, of varying sizes and with a preference for epithelial trophism on the elbows, scalp, knees, trunk and nails. In addition, its particularity lies in the hyperproliferation of keratinocytes (secondary), which help to activate the immune system. Thus, factors such as stress, skin wounds (Koebner's phenomenon), smoking, infectious diseases (especially for the guttate form), medication (beta-blockers) and high alcohol intake favor its development.<sup>1</sup>

It affects 2 to 5% of the world's population, distributed equally between the sexes and leading in the second to fourth decade of life.<sup>2</sup> In Brazil, according to the Consensus of the Brazilian Society of Dermatology, there were 1,339 cases out of a total of 54,519 Brazilians.<sup>4</sup>

The most common form is plaque or vulgar psoriasis (localized or generalized) in 90% of cases. These lesions are accompanied by pain and discomfort, since in the active phase they lead to pruritus and itching, as well as emotional weakness (exposed disease), favoring the development of stress and/or depression. Thus, treatment is limited not only to clinical control, but also to improving quality of life, systemic and topical medication, phototherapy (severe or moderate forms), sun exposure and continuous skin moisturizing.<sup>3</sup>

In short, although psoriasis is well known throughout the scientific community, it is not maintained in the population, even more so with the existing types of treatment and the importance of early detection. Thus, the aim of this study is to draw up a profile of psoriasis mortality in Brazil over the last 25 years, helping to redirect control actions, provide a scientific basis, improve quality of life and make public control policies and population education for early recognition more effective.

METHODS

This research is a retrospective exploratory epidemiological study of a descriptive nature in which data obtained from mortality data and made available on the website of the Department of Informatics of the Unified Health System (DATASUS) and the Mortality Information System (SIM) were used. Notifications of psoriasis cases in Brazil from 1999 to 2023 were selected. Descriptive and analytical analyses of the data were carried out and the results organized in tables. The variables studied were year of death, region/federal unit, ICD-10 category (L40 Psoriasis), age group, gender, color/race, place of occurrence. However, this study did not include quantitative and qualitative perspectives in relation to access to health, racial disparities, underreporting and the relationship with population density in each region analyzed.

The information was collected on August 28, 2024. As the data is available in a public domain database, this study did not require analysis by the Ethics Committee. The authors declare that there is no conflict of interest.

RESULTS

A total of 729 cases were observed in the period analyzed (table 1), with 2023 being the most prevalent year in terms of number of cases, totaling 55 deaths (7.54%).

TOTAL	729
1999	11
2000	13
2001	14
2002	20
2003	11
2004	9
2005	12
2006	21
2007	25
2008	30
2009	21
2010	30
2011	24
2012	36
2013	29
2014	45
2015	29
2016	48
2017	41
2018	37
2019	54
2020	28
2021	40
2022	46
2023	55

Table 1: Deaths due to psoriasis by year of death, 1999-2023.

Source: MS/SVS/CGIAE - Mortality Information System - SIM

When analyzing the region with the highest number of deaths per thousand inhabitants due to psoriasis, the Southeast region predominated, with 354 cases (48.56%), as shown in Table 2. The northern region had 44 deaths (6.03%).

Total	729
Northern Region	44
Northeast Region	157
Southeast Region	354
Southern Region	128
Central-West Region	46

Table 2: Deaths due to psoriasis by region, 1999-2023.

Source: MS/SVS/CGIAE - Mortality Information System - SIM

In terms of gender, there was a higher mortality rate in the southeast, among both men and women. Of these, there were 188 deaths (153.11% of all deaths in the southeast region) among men in the southeast region, as opposed to 166 deaths (46.89% of all deaths in the southeast region) among women in the region. Between the two variables (male and female) and the five Brazilian regions, the lowest number of deaths occurred in the northern region, 16 cases among women, which represents 2.19% of the total deaths (729) recorded, as shown in table 3.

Table 4 shows that the 60-69 age group was the most affected, accounting for 22.39% (163 records) of deaths during the study period. There was a predominance of deaths among patients in the sixth decade of life (southeast region), as well as in all the other age groups surveyed. Furthermore, the southeast region had the highest number of deaths from psoriasis at all the ages included in this study, which is not the case for the south and central-west regions, which had no deaths between the ages of 10 and 14, and the north, northeast, south and central-west regions, which had no deaths between the ages of 15 and 19.

Another variable analyzed was color/race. Among the white, black, yellow, brown and indigenous colors/races, the white color had the highest mortality rate: 422 cases, or 60.63%. Of these, the southeast region predominates not only in white deaths but also in all the other colors/races analyzed. Cases among whites in the southeast region account for more than half of the deaths among this race: 55.92% (236 deaths), according to the data shown in table 5.

When analyzing deaths in the southeast region (table 6), a total of 354 cases were recorded, with the state of São Paulo leading the way with 181 cases (51.12%). Followed by Rio de Janeiro (22.03%), Minas Gerais (21.75%) and Espírito Santo (5.08%).

ICD-10 Category	MG	ES	RJ	SP	TOTAL
TOTAL	77	18	78	181	354
L40 Psoriasis	77	18	78	181	354

**Table 6:** Deaths due to psoriasis by state in the southeast region, 1999-2023.

Source: MS/SVS/CGIAE - Mortality Information System - SIM

## DISCUSSION

Thus, it can be inferred that the mortality profile for psoriasis over the last 25 years in Brazil is male, white, in the sixth decade of life and from the south-east. In relation to color/race, this study corroborates the work of Silveira *et al*, 2017 which cites this chronic inflammatory disease as being more prevalent in whites.<sup>6</sup> However, in relation to gender distribution, it differs from the study by Vilefort *et al*, 2022, which indicates that this pathology is equivalent in both sexes.<sup>2</sup> As for the prevalence of this comorbidity in the elderly, the current study is in agreement with the work of Brandão *et al*, 2024, it is believed that the higher prevalence in the elderly according to the literature, may be related to the increase in life expectancy which consequently leads to the growth of chronic diseases in the population, including psoriasis, due to the processes of immunosenescence and greater exposure to risk factors.<sup>5</sup> In addition, the geriatric population tends to have multiple comorbidities and therefore use several medications concomitantly, which can be a triggering factor for the disease.<sup>5</sup> Furthermore, the prevalence of deaths in the Southeast may be associated with the higher population density in the region and consequently a greater number of cases.

Sex	Total	Northern Region	Northeast Region	Southeast Region	Southern Region	Central West Region
Female	330	16	74	166	53	21
Male	399	28	83	188	75	25

**Table 3:** Deaths due to psoriasis by region with gender variable, 1999-2023.

Source: MS/SVS/CGIAE - Mortality Information System - SIM

Age group	Total	Northern Region	Northeast Region	Southeast Region	Southern Region	Central West Region
10 to 14 years	3	1	1	1	0	0
15 to 19 years	3	0	0	3	0	0
20 to 29 years old	30	3	9	12	2	4
30 to 39 years old	49	5	14	19	6	5
40 to 49 years old	100	5	25	38	22	10
50 to 59 years old	136	6	22	67	31	10
60 to 69 years	163	12	31	85	28	7
70 to 79 years	147	9	31	75	24	8
80 years and over	97	3	24	53	15	2

**Table 4:** Deaths due to psoriasis by region with age group variable, 1999-2023.

Source: MS/SVS/CGIAE - Mortality Information System - SIM

Color / Race	Total	Northern Region	Northeast Region	Southeast Region	Southern Region	Central West Region
White	422	7	42	236	110	27
Black	52	1	17	27	0	0
Yellow	5	0	0	5	0	0
Brown	213	32	86	70	8	17
Indigenous	4	3	1	0	0	0

**Table 5:** Deaths due to psoriasis by region with color/race variable, 1999-2023.

Source: MS/SVS/CGIAE - Mortality Information System - SIM

# CONCLUSION

In summary, mortality from psoriasis in Brazil over the last 25 years has reached a total of 729 cases, highlighting the current alarming public health problem, both in terms of pro-paedeutics and the follow-up of these patients to avoid such an outcome. It is therefore possible to delineate that mortality from psoriasis is predominantly associated with specific characteristics of gender, age group and region. There was a clear concentration of deaths in the Southeast and the state of São Paulo, with 358 and 181 cases respectively, as well as a

predominance of white men aged between 60 and 69. This scenario underlines the need to adapt the most effective regional strategies for expanding information about the disease and treatment, with the aim of reducing the number of cases with complications resulting from the disease. Furthermore, it is of the utmost importance to invest in the early detection of the disease and its early recognition by health professionals.

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