

Aids and Brazilian social welfare: analysis of benefits granted in social security and social assistance, 2004-2016

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Abstract *The study explores the distribution of AIDS through sociodemographic variables, within the scope of Brazilian social security and social assistance. Twenty-seven federal units were used for data spatialization and analysis. Data were stratified according to gender, age group, area of residence, social welfare membership, type of benefit received and grant method for the beneficiaries. Benefits were classified as social security (71,939, 72.4%), social assistance (26,302, 26.5%) and accident benefits (1,128, 1.1%), a large proportion of which were granted to males (64,654, 65.1%). The unemployed (50,404, 50.7%), who lived in urban areas (96,767, 97.4%), were aged between 20 and 39 years (49,508, 49.8%) and who received benefits based on article 27 of Decree N° 3048/99 (51,985, 52.3%) were the most incident. The results show that more than half of the benefits granted were for unemployed individuals or those without job stability and, thus, did not contribute to social security for continuous periods. This fact reaffirms the segregation in the labor market to which these individuals are subjected. Also, it is noted that AIDS persists at high levels at the most productive stage of life.*

Key words AIDS, Social Security, Social Assistance

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Introduction

AIDS was a cause of great social concern at the end of the 1980s in Brazil, with significant repercussions on public health and the economic sphere. The syndrome had a high incidence among the most vulnerable groups and spread among heterosexual women and men¹. From 1980 to June 2017, 882,810 AIDS cases were confirmed in Brazil, with an annual average of 40,000 new cases in the last five years, and was more incident among men (576,245; 65,3%) than among women (306,444; 34.7%). The rates of detection of AIDS in men in the last ten years have shown a growing trend. In 2006, the rate was 24.1 cases/100,000 inhabitants, which rose to 25.8 in 2016, representing an increase of 7.1%. Among women, this rate experienced a declining trend in the last ten years, from 15.9 cases/100,000 inhabitants in 2006 to 11.6 in 2016, representing a reduction of 27.0%. The gender ratio has critical regional differences. In the Southeast and Midwest regions, there is a predominance of men compared to the other regions, with a gender ratio in 2016, respectively, of 25 and 26 cases in men for every 10 cases in women. In the North and Northeast regions, the gender ratio in 2016 was, respectively, 22 and 21 cases in men for every 10 cases in women, while the South region evidenced greater participation of women in AIDS cases, with a gender ratio of 17 men for every 10 women. The highest concentration of AIDS cases in Brazil is in individuals aged between 25 and 39 years, in both genders. The cases in this age group correspond to 52.9% of the male cases and, among women, 49.0% of the total cases recorded².

The proportional distribution of AIDS cases, identified from 1980 to June 2017, shows a concentration in the Southeast and South regions, each accounting for 52.3% and 20.1% of all cases. The Northeast, Midwest and North regions correspond to 15.4%, 6.1% and 6.0%, respectively². Also, it was observed that, among the federative units (UF), 16 had a lower rate than the national one (18.5/100,000 inhabitants), with Acre being the state with the lowest rate - 8.7 cases/100,000 inhabitants.

The social impacts of AIDS, whether due to the increase in HIV infection or the stigma of the disease, have significant effects on the economy. The vast majority of cases are in the economically active population. Also, treatment costs are quite high. The current budget of the Ministry of Health for the acquisition of antiretrovirals is R\$ 1.1 billion³. In the specific case of Brazil, add-

ed to this scenario, besides the expenses with the treatment of people living with HIV/AIDS are the social security and social assistance expenses of individuals affected by the disease. This is, therefore, a significant impact on the three pillars of social security.

Since 2013, as recommended by the World Health Organization (WHO), all HIV-infected individuals in Brazil receive antiretroviral therapy regardless of the CD4 count. This strategy increases life expectancy and reduces the risk of viral transmission⁴. Also, in 2017, Brazil was one of the first countries in the world to supply free antiretroviral Dolutegravir, the most recommended drug by the WHO for HIV/AIDS treatment⁵. With a timely diagnosis, access to current medications and good adherence to lifelong treatment, people with newly acquired infections can have a life expectancy almost equal to that of an HIV-negative individual, exceeding 50 years in some estimates^{6,7}. Before the progress of AIDS therapy in recent years, a lower number of sick individuals who need to be removed from work is expected, at the risk of a substantial burden on the country in two directions, namely, in the treatment of patients and the payment of long-term benefits⁸.

This study analyzed nationally consolidated information regarding the granting of social security, accident and social assistance benefits to people living with AIDS, whether insured or not by the Brazilian General Social Security System (RGPS). The use of geoprocessing facilitated the spatial analysis of variables from the Brazilian RGPS database, allowing the recognition of the impact of the disease on Brazilian social security and the understanding of specific contexts highlighted by Federative Unit (UF).

Methods

This is an exploratory, ecological study based on secondary data obtained from the Unified Benefit Information System of the Brazilian Ministry of Social Security (SUIBE). This information system is not freely accessible and has sociodemographic and epidemiological data on the beneficiaries. In the SUIBE, all beneficiaries with the B24 (Unspecified Human Immunodeficiency Virus [HIV] Disease) registry in the *International Code of Diseases* (ICD) variable between the period 2004 and 2016 were selected. This system was implemented in mid-2003, but became more robust in 2004, thus this year's choice for the on-

set of data collection. The variables of interest for the study were exported to an Excel spreadsheet. The Epi Info 7.1.5 program (CDC, Atlanta, USA) was used for consistency analysis, frequency distribution and data stratification.

The following variables were analyzed: gender, age range (0-9, 10-19, 20-39, 40-59 and 60 years or more), dwelling region (urban and rural), federative unit, social security membership type (unemployed, employee, individual taxpayer and others), type of benefit received (social security, accident, social assistance and subgroups of each type) and benefit granting method (regular grant, grant based on article 27 of Decree 3048/99 and others).

The AIDS detection rate, the number of AIDS cases/Number of benefits granted and the incidence rate of benefits were calculated for each federative unit in the period. The Brazilian population of 2010 was used for the calculations of the population indicators, since they are the data of the last Brazilian census, besides constituting the median year in the historical series studied. The Spearman correlation was used to evaluate the correlation between the number of AIDS cases and the number of benefits per federative unit.

The Geographic Information System (GIS) QGIS 2.18 was used for data spatialization, with which it was possible to elaborate the map mosaics. The analytical units were the 27 UF (26 states and the Federal District), as defined by the Brazilian Institute of Geography and Statistics (IBGE).

Social security and social assistance expenditure with new AIDS-related grants in 2016 was calculated and compared to total social security and social assistance expenditure for the same year.

The Research Ethics Committee of the Federal University of Uberlândia, Minas Gerais, Brazil approved the study.

Results

In the analyzed period, 517,326 AIDS cases were registered in Brazil, and 99,369 social security benefits were granted to people living with AIDS, namely, social security (71,939, 72.4%), social assistance (26,302, 26.5%) and accident (1,128, 1.1%) benefits. Most of the benefits were granted to males (64,654, 65.1%). Among genders, each type of benefit followed the same trend of percentage distribution, but among female subjects, the social assistance benefits had a higher

frequency when compared to males, 36.1% and 21.3%, respectively.

The benefits were more incident in the age groups of 20-39 years (49,508; 49.8%) and 40-59 years (45,080; 45.4%). Among the beneficiaries aged between 20 and 39 years, the most incident benefit types were *sickness benefit* (34,017; 68.7%) and *welfare to the disabled* (12,330; 24.9%), as well as in the age group of 40-59 years old, *sickness benefit* (28,382, 62.9%) and *welfare to the disabled* (11,144; 24.7%). In this range, the number of *pension benefits due to social security disability* (5,059; 11.2%) was also significant.

The highest rates of AIDS detection in the period studied were in Rio Grande do Sul, Santa Catarina and Rio de Janeiro, respectively. The highest incidence rates of social assistance benefits were in Amapá, Rondônia and Amazonas, respectively (Table 1). Concerning the incidence rates of social security and accident benefits, the highest incidence rates were recorded in Santa Catarina, Rio Grande do Sul and Rio de Janeiro. Rio Grande do Norte, Acre and Roraima had the highest ratios of the number of AIDS cases/Number of benefits granted, while the lowest ratios were recorded in Rondônia, Amapá and Paraíba (Table 1).

There was a strong positive correlation when the demographic distribution of the number of AIDS cases was analyzed against the demographic distribution of AIDS beneficiaries ($r = 0.97$, $p < 0.0001$).

Figure 1 spatially analyzes the types of benefit grants given by the Brazilian Social Security Agencies (APS), by UF. Grants based on article 27 of Decree 3048/99 were the most incident (51,985; 53.3%), followed by regular grants (46,103; 46.4%) and "Other" types of grants (1,281; 1.3%). Grants based on article 27 of Decree 3048/99 were more incident in Rio de Janeiro (619.4/1,000 benefits) and Goiás (594/1,000 benefits). Amapá and Acre had the highest incidence rates of regular grants, with 771.5 and 697.7 grants per 1,000 benefits, respectively. Other types of grants were more incident in Acre (23.3/1,000 benefits) and Amapá (23.1/1,000 benefits).

Figure 2 analyzes the benefits by type of beneficiaries' affiliation in the Brazilian social security system. In total, 50,404 (50.7%) benefits were granted to unemployed beneficiaries, most of whom received the *benefit of welfare to the disabled person* (24,710; 49.0%) and *social security sickness benefit* (22,239, 44.1%). The highest rates of incidence of benefits to the unemployed were

Table 1. Aids indicators according to the incidence of cases and the granting of social welfare benefits, by federative unit. Brazil, 2004–2016.

Federative Unit	Number of AIDS cases	Brazilian Population ^a	Number of benefits granted	AIDS detection rate in the period ^b	Number of AIDS cases / Number of benefits granted ratio	Social Assistance benefits incidence rate ^c	Social security and accident benefits incidence rate ^c
North Region	43,182	15,880,839	8,902	271.9	4.8	25.9	30.1
Rondônia	4,192	1,560,501	1,075	268.6	3.9	32.4	36.5
Acre	787	732,793	86	107.4	9.1	5.2	6.6
Amazonas	13,268	3,480,937	2,988	381.2	4.4	31.3	54.6
Roraima	1,731	451,227	208	383.6	8.3	24.8	21.3
Pará	19,360	7,603,239	3,744	254.6	5.2	25.2	24.0
Amapá	1,741	668,689	477	260.3	3.6	50.8	20.5
Tocantins	2,103	1,383,453	324	152.0	6.5	8.1	15.3
Northeast Region	98,328	53,078,137	18,633	185.3	5.3	13.9	21.2
Maranhão	14,005	6,569,683	2,836	213.2	4.9	20.1	23.1
Piauí	5,058	3,119,015	884	162.2	5.7	6.3	22.0
Ceará	14,801	8,448,055	3,052	175.2	4.8	11.9	24.3
Rio Grande do Norte	5,196	3,168,133	314	164.0	16.5	3.1	6.8
Paraíba	5,524	3,766,834	1,610	146.7	3.4	18.6	24.1
Pernambuco	22,502	8,796,032	4,426	255.8	5.1	21.1	29.2
Alagoas	4,929	3,120,922	644	157.9	7.6	9.6	11.0
Sergipe	3,598	2,068,031	768	173.9	4.7	14.2	22.9
Bahia	22,715	14,021,432	4,099	162.0	5.5	11.5	17.7
Southeast Region	229,954	80,353,724	42,645	286.2	5.4	10.8	42.3
Minas Gerais	38,133	19,595,309	8,626	194.6	4.4	10.1	34.0
Espirito Santo	10,087	3,512,672	1,240	287.2	8.1	10.0	25.3
Rio de Janeiro	67,268	15,993,583	12,743	420.2	5.3	16.3	63.4
São Paulo	114,466	41,252,160	20,036	277.5	5.7	9.1	39.5

it continues

Table 1. Aids indicators according to the incidence of cases and the granting of social welfare benefits, by federative unit, Brazil, 2004-2016.

Federative Unit	Number of AIDS cases	Brazilian Population ^a	Number of benefits granted	AIDS detection rate in the period ^b	Number of AIDS cases / Number of benefits granted ratio	Social Assistance benefits incidence rate ^c	Social security and accident benefits incidence rate ^c
South Region	111,962	27,384,815	23,025	408.8	4.9	15.9	68.1
Paraná	26,387	10,439,601	6,074	252.8	4.3	9.7	48.5
Santa Catarina	28,482	6,249,682	7,288	455.7	3.9	13.7	102.9
Rio Grande do Sul	57,093	10,695,532	9,663	533.8	5.9	23.4	67.0
Midwest Region	33,900	14,050,340	6,164	241.3	5.5	12.5	31.4
Mato Grosso do Sul	6,703	2,449,341	1,340	273.7	5.0	18.8	35.9
Mato Grosso	8,599	3,033,991	1,603	283.4	5.4	15.4	37.5
Goiás	11,793	6,004,045	1,798	196.4	6.5	7.0	22.9
Distrito Federal	6,805	2,562,963	1,423	265.5	4.8	16.0	39.6
Total	517,326	190,747,855	99,369	271.2	5.2	13.8	38.3

^aBrazilian population census - 2010; ^bNumber of AIDS cases diagnosed in the period in the place of residence/Population of residents in the location, in the same period of notification; ^cNumber of benefits granted in the place of residence in the period/Population of residents in the location, in the same period of notification.

in Amapá (819.7/1,000 benefits) and Roraima (716.1/1,000 benefits). The 14 highest unemployment benefit rates were in the north and north-east of Brazil. A total of 28,775 (28.9%) benefits were granted to employed beneficiaries, of which 25,416 (88.3%) were social security sickness benefit and 2,786 (9.7%) were social security disability pensions. The highest rates of incidence of employee benefits were in Goiás (345.9/1,000 benefits) and Santa Catarina (342.5/1,000 benefits). Among the individual taxpayers, 12,625 (12.7%) benefits were granted, of which 10,131 (80.3%) of the *social security sickness benefit* and 1,620 (12.8%) were social security retirement due to disability. The highest rates of incidence of benefits for individual taxpayers were in Rio de Janeiro (183.2 per 1,000 benefits) and Santa Catarina (181.4 per 1,000 benefits). Among the "Others" category, affiliated to the RGPS, domestic employees (2,997; 3.2%), special insureds (2,498; 2.5%), facultative (1,751; 1.8%), and others forms of membership with smaller percentages were clustered. In total, 7,565 (7.6%) benefits were granted in this category, and most (5,986; 79.1%) were of the *social security sickness benefit*, and 762 (10.1%) of the *social security retirement due to disability*. The highest rates of incidence of benefits for the "Other" category were in Maranhão (219.7/1,000 benefits) and Piauí (181.0/1,000 benefits).

Figure 3 evaluates the granting of benefits by area of residence. Most of the benefits (96,767, 97.4%) were granted to beneficiaries living in urban areas, mainly of the *social security sickness benefit* (61,557; 63.6%) and *welfare to the disabled* 26,246 (27.1%). For beneficiaries residing in the rural area, the benefits of the *social security sickness benefit* (2,215; 85.1%) and *social security retirement due to disability* (229; 8.8%) were more common. The highest incidence rates of benefits for urban residents were in Rio de Janeiro (998.9/1,000 benefits) and São Paulo (997.8 per 1,000). Maranhão (192.9/1,000 benefits) and Piauí (145.9/1,000 benefits) were the ones with the highest rates of incidence of benefits in the rural area.

For 2016, we analyzed the economic impact of the new grants for social security, accident and social assistance benefits granted to beneficiaries living with AIDS concerning the overall total of new benefits grants in Brazil in the same year. A total of 5,132,278 benefits were granted in Brazil this year. Of this total, 8,677 (0.17%) were benefits for individuals living with AIDS. Among males, the percentage of AIDS was high-

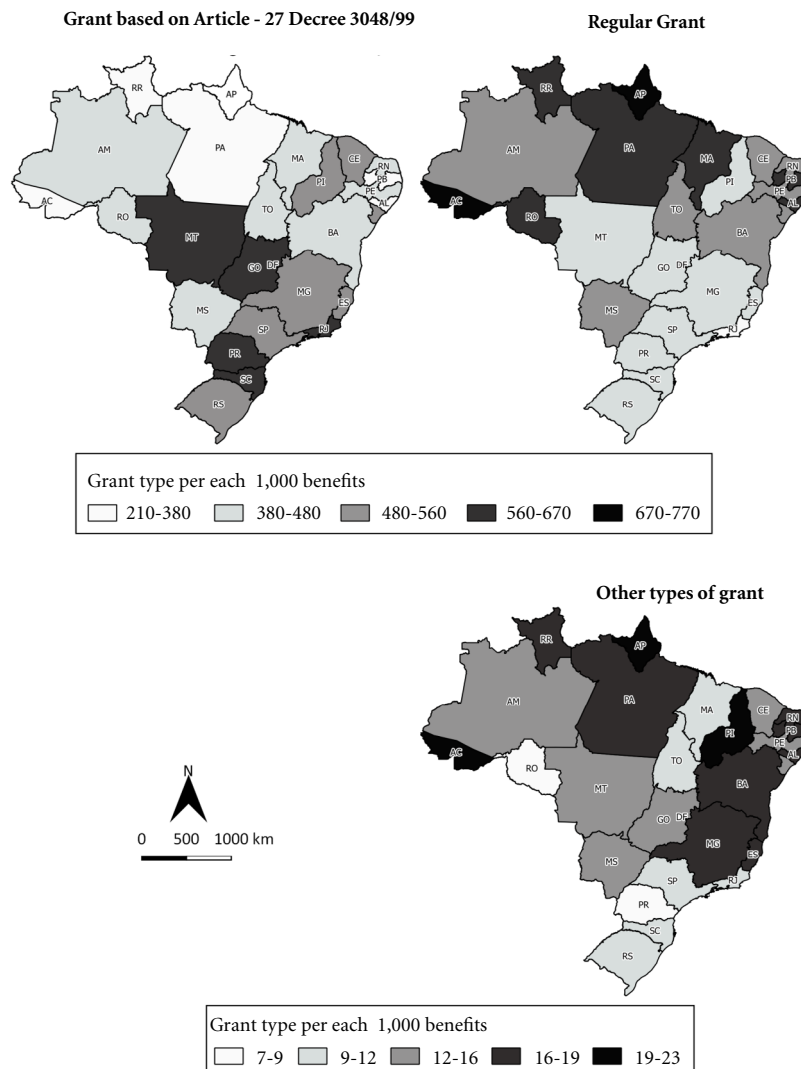


Figure 1. AIDS-related social welfare benefits granting type. Brazil, 2004-2016.

Source: Ministry of Social Security, 2016.

er, 5,743 benefits in 2,228,069 social security and social assistance benefits, which is equivalent to 0.26%. On the other hand, benefits for the female to individuals living with AIDS were 2,934 in 2,904,382, which is equivalent to 0.10%.

Total expenditure in 2016 with new grants of AIDS-related benefits amounted to R\$ 72,243,544. The average monthly AIDS-related expense with new benefits in 2016 was R\$ 1,095.42, lower than the average monthly gen-

eral social security and social assistance expense, which was R\$ 1,305.40. Among males, the average monthly expenditure was higher, when compared to the expenditure among females, R\$ 1,169.68 and R\$ 950.07, respectively.

At the end of the analyzed period, of the 95,162 benefits that contained follow-up data, 30,399 (31.9%) were still active, 64,366 (67.6%) discontinued and 397 (0.42%) were blocked.

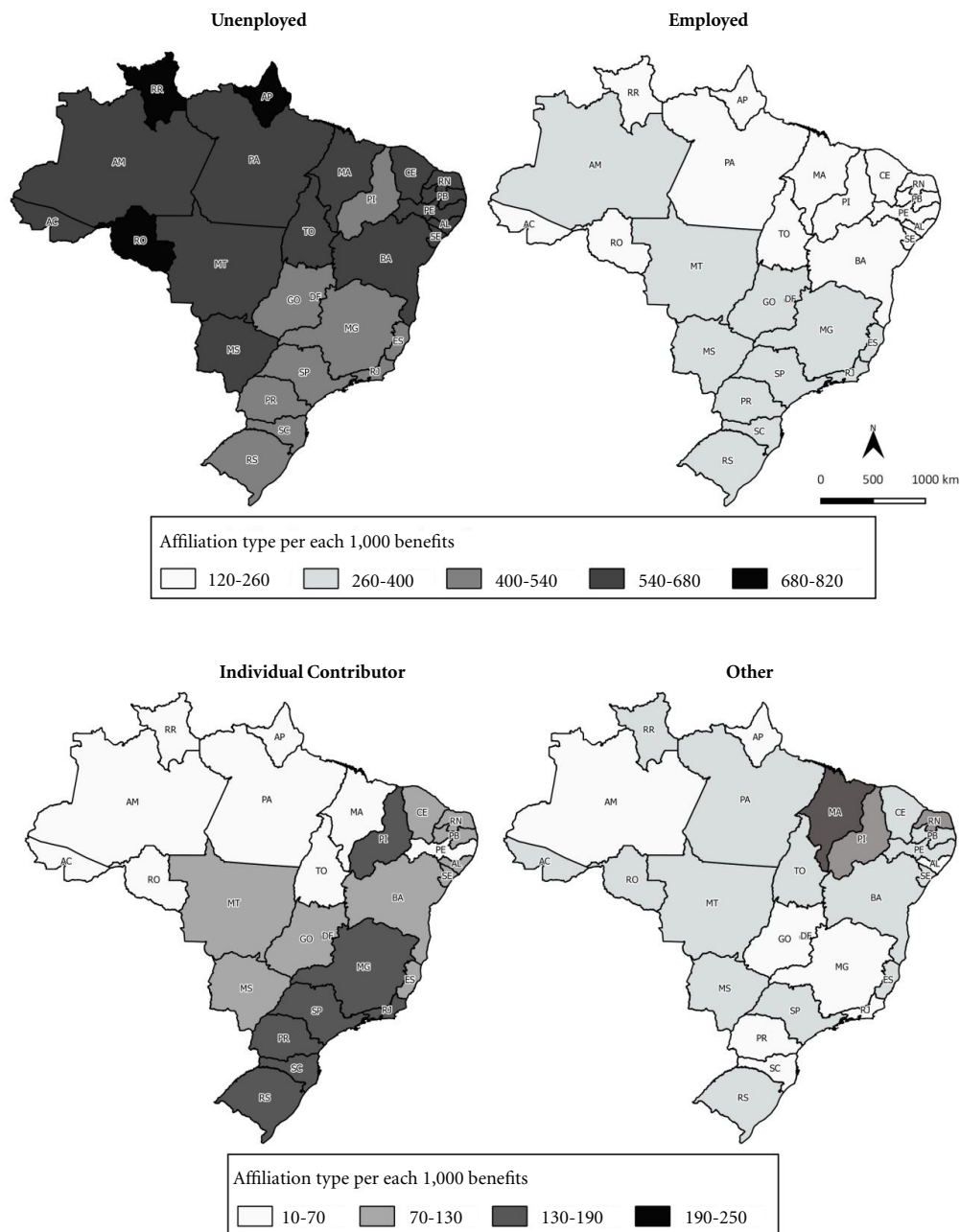


Figure 2. Affiliation type of social welfare beneficiaries living with AIDS. Brazil, 2004-2016.

Source: Ministry of Social Security, 2016.

Discussion

Currently, the discussion about the Brazilian social security situation, especially social security, generates controversies regarding its sustain-

ability⁹. Concerning AIDS, a highly stigmatizing chronic syndrome, this debate becomes even more relevant. The system of information on social security and social assistance data in Brazil (SUIBE) is not freely accessible, and as a result,

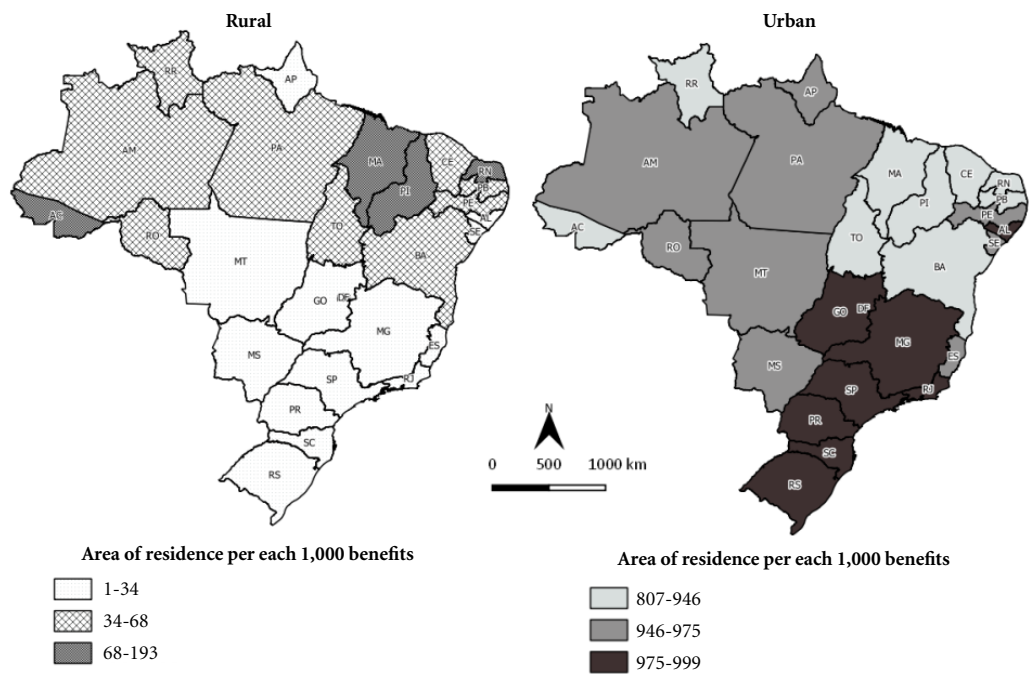


Figure 3. Area of Residence of social welfare beneficiaries living with AIDS. Brazil, 2004-2016.

Source: Ministry of Social Security, 2016.

very few studies address this issue in the country. This study is unpublished in Brazil and seeks to analyze AIDS within social security and social assistance, using individual data from all beneficiaries in Brazil for 12 years.

The study found that most of the benefits provided by PHC were social security benefits, predominantly for males. This can be explained, in parts, by the fact that the number of AIDS cases in men has shown an upward trend² in the last 10 years. The prevalence of HIV among men who have sex with men increased from 12.1% in 2009 to 18.1% in 2016, according to a study conducted in 12 Brazilian cities⁹. On the other hand, there is a blatant inequality in the labor supply, with more apparent informality concentrated in females¹⁰. Sectoral, occupational segregation and even lower pay rates contribute significantly to gender disparities, both concerning numbers and the quality of jobs. These inequalities impact on limited access to labor-related social protection, where such schemes exist, which denotes an essential element of female vulnerability¹¹. Informal work and with lower earnings for women will have a future impact on the coverage of contributory schemes, such as RGPS.

The highest rates of AIDS detection in the analyzed period were in Rio Grande do Sul, Santa Catarina and Rio de Janeiro. However, according to the *HIV AIDS Epidemiological Bulletin* of 2017, a rate comparison between 2006 and 2016 showed a decline of 17.6%, 22.3% and 21.4% in these UFs, respectively. Nonetheless, in 2016, Rio Grande do Sul had the second highest detection rate in the country, with 31.8 cases/100,000 inhabitants².

The incidence rates of social assistance benefits were higher in Amapá, Rondônia and Amazonas. These data reflect the socioeconomic characteristics of the northern region of the country. On the other hand, the incidence rates of social security benefits were higher in Santa Catarina, Rio Grande do Sul and Rio de Janeiro. These regions are more developed, with large industrial centers and the odds of formal jobs become higher¹².

Rio Grande do Norte, Santa Catarina and São Paulo evidenced the highest ratios of Number of AIDS Cases/Number of social assistance benefits. For example, in Rio Grande do Norte, one benefit was granted for every 52.5 cases of AIDS. Regarding the number of cases of AIDS/Number of so-

cial security and accident benefits, the most important were Rio Grande do Norte, Roraima and Acre. Again taking the example of Rio Grande do Norte, one social security or accident benefit was granted for every 24.2 cases of AIDS. This data can be interpreted in three ways: notified cases may be in full employment activity, without the need to enjoy social security or social assistance benefits. These cases may also not be included in the criteria for the granting of social security or social assistance benefits. Another possibility would be that these cases would not have access to the social rights that are insured to them.

Another essential issue in this study is the high rates of benefits granted concerning the 20-59 age group, which coincide with the most productive period of life. Therefore, a work incapacity in this period reflects directly in the labor market and the financial and actuarial system. The text of art. 201 of the Federal Constitution (CF) tacitly states that “social security will be organized in the form of a general regime, of a contributory nature and obligatory affiliation, observing criteria that preserve the financial and actuarial balance”¹³. The principles of financial and actuarial balance aim to direct the Social Security System in its management so that its maintenance is always viable. Social Security has its sources of collection, among them, the contributions paid by employees and employers, and also has its expenses, such as the benefits that it must pay to the insured, pensions and sickness benefits. The financial balance sought by the CF is that at the end of the period, after considering all the collections and expenses, no negative balance is left in the Social Security, which can lead to the unfeasibility of the entire system if a negative balance occurs repeatedly. On the other hand, the actuarial balance is the way financial equilibrium will be sought, since actuarial science, which is an exact science, through various factors, can predict future welfare expenses and, based on these, enable management of collections and payments, not losing sight of the obligations that will exist in the not too distant future.

The results show that more than half of the benefits granted were for unemployed individuals. One of the basic requirements for the granting of social security benefits is to be insured by the RGPS, that is, to have an insured status and to achieve the minimum number of monthly contributions to Social Security. The insured status is the condition assigned to every citizen affiliated with the National Social Security Institute (INSS) who has an identification code and

makes monthly payments under Social Security. However, the legislation determines that, even in some conditions without collections, these members will still maintain this status, which is called a “grace period”¹⁴. This was the situation of 51% of the beneficiaries of this study, who were receiving social security and accident benefits, although they were not contributing. The others received social assistance benefits because they did not meet the social security criteria. The fourteen highest rates of incidence of benefits to the unemployed were in the North and Northeast. The territorial inequality of this indicator reflects the economic and sociocultural diversity of Brazil, evidencing the social vulnerability of these populations.

In the event of loss of the insured status, contributions prior to such loss shall only be computed for the purpose of grace period after the insured has, as of the new membership in the RGPS, a minimum of 50% of the contributions for the benefit to be claimed, as per Article 1 of Law No. 13.457/2017¹⁵. In the case under study, it is not necessary to mention the “grace period” as a requirement for the granting of social security benefits, since AIDS is listed in the grace period-exempt diseases, according to Art. 151 of the Law on Social Security Benefits¹⁶. However, the status of insured was, and still is, indispensable for the recognition of entitlement to such benefits as long as the onset of disability for work falls within the period between his/her return to the RGPS and the date of removal from his/her activity, whether employed, temporary worker and domestic employee. For other applicants for social security benefit, both the date of onset of illness and the date of the onset of disability must fall after the return to the RGPS^{15,17}. If the applicant does not meet the above criteria, there is the possibility of claiming the social assistance benefit¹⁸. The type of statutory order by the INSS in granting the benefits was evaluated. It is important to highlight that there are several statutory order codes provided for the granting and denial of benefits in general. This study highlighted the three most common types of statutory orders, which is the standard grant, which is when all the criteria required at the time of grant are fulfilled, such as work incapacitating disease, insured status, grace period or falling within the criteria of the social assistance benefit, for example.

We also highlight the grant based on article 27 of Decree 3048/99. In this paper, we clarify that the eventual loss of the insured status would entail that the contributions before this loss may

be computed for the grace period, adding to the contributions of the new members to the RGPS. Currently, previous contributions are only computed when at least 50% of the number of contributions required to comply with the grace period for the benefit to be claimed are achieved, as per Article 1 of Law No. 13.457/2017¹². As already discussed, the granting of benefits in the case of beneficiaries living with AIDS does not depend on the grace period. However, even so, beneficiaries living with AIDS who do not contribute to continuous periods in social security are included in this criterion. In this case, 52.3% of the benefits were granted by Article 27 of Decree 3048/99, reflecting job instability, unemployment and segregation in the labor market to which these individuals are subjected.

The Brazilian RGPS adopts the simple distribution financial system. It can be said that this regimen proposes a direct transfer between generations, since active workers (current generation) pay the benefits of the inactive (past generation), while the payment of their benefits will depend on the future generation (new workers entering the system) maintaining the intergenerational transfer. The adequate treatment of AIDS, provided by the Ministry of Health, from the diagnosed virus, has increased the longevity and quality of life of individuals with HIV/AIDS. This fact, coupled with the increased number of AIDS cases in recent years and informality in the labor market, has a significant impact on Brazil's financial and economic system^{19,20}. It should be noted that the National Panel of Standardization of Federal Special Courts (TNU) approved Gist N° 78, which discusses the requisition of social security benefits by people with HIV, only in 2014. It was established that, in the case of HIV patients, even the asymptomatic ones, the disability transcends mere physical limitation, and affects the social sphere of the applicants, segregating them from the labor market. Thus, personal, economic, social and cultural aspects must also be considered in the characterization of disability²¹. The syndrome alone generally does not incapacitate for work, but the social stigma still dramatically affects access to the labor market, which can be evidenced by the high number of unemployed and social assistance benefits granted in our study.

The analysis of the results also revealed that the social security and social assistance benefits were granted mostly to the individuals living in

urban areas and, expectedly, the highest rates of benefit incidence were in Rio de Janeiro and São Paulo. Part can be explained because the urban population in Brazil is 84.4%²² according to IBGE data. The smallest number of cases in rural areas, despite the scarce literature on the subject, reflects the reduced number of benefits granted. Sociocultural factors such as poverty, low schooling, poor health services, informal work, and geographic isolation also distract the rural population from their social rights concerning AIDS^{23,24}. Also, the rural population is most of the time able to produce means for its subsistence and that of its family, and it is necessary to seek benefits from the RGPS²⁵. Maranhão, Piauí, Acre and Rio Grande do Norte had the highest rates of incidence of benefits in the rural zone, all of them above 100 cases for every 1,000 benefits. On average, the four States had incidence rates four times higher than the others. This can be attributed to more efficient health services and social rights in the rural areas of these places, but the conclusions on this subject require more in-depth *in loco* technical-scientific studies.

The technological advances achieved with the introduction of antiretroviral therapy have delegated AIDS to the condition of chronicity. However, the Brazilian social security system suffers severe consequences to support its tripod (health, social security and social assistance). This scenario is undoubtedly a challenge for Brazil, since regional inequalities are conspicuous, and despite all investment and social security expenditures, the disease persists at increasing levels and in the most productive stage of life.

This study contained data on benefit grants, amounts paid, as well as the length of each benefit, and we could calculate the costs of AIDS-related benefits. However, the comparison with the general social security and social assistance data was hampered by the unavailability of benefit duration data in the Statistical Yearbook of Social Security, which was the main limitation of the study. However, concerning the mean monthly expenses in 2016, we were able to make legitimate comparisons. The values of AIDS-related benefits were lower when compared to the amounts generally paid by social security.

The budget cuts that have drastically reached the Brazilian Unified Health System and Education. They jeopardize all the progress achieved so far, with the prospect of further increasing the impact of AIDS in all spheres of social security.

Collaborations

KAR Santos and JE Limongi worked on the design, planning, analysis and interpretation of data, the critical review of the content and also on the approval of the final version of the manuscript. AMM Oliveira, AMG Bós and L Melo worked on the design, analysis and interpretation of data and the approval of the final version of the manuscript.

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