

ORIGINAL ARTICLE

Epidemiological Profile of Aids Cases in Young Brazilians from the Perspective of the Vulnerability Concept

Anderson da Silva Moreira¹, Lavínia Helena Rufino da Silva²,
Thatiana da Fonseca Peixoto³, Isaías Vicente Santos⁴, Thaís Honório Lins Bernardo⁵,
Mariana Kissia Santos Lins de Carvalho⁶, Mirana Moura Licetti⁷,
Rossana Teotonio de Farias Moreira⁸

Highlights

- (1) The profile of Aids cases in young Brazilians remains characteristic.
- (2) There is a significant difference in the number of Aids cases in young people by region.
- (3) Health vulnerability strongly influences AIDS cases in young people.

ABSTRACT

The objective of this study was to describe the epidemiological profile of young Brazilians diagnosed with Acquired Immunodeficiency Syndrome (AIDS) between the years 2017 and 2021 from the perspective of the concept of health vulnerability. This is an epidemiological study of descriptive, retrospective and quantitative approach. The Detection Rate of AIDS in the young population per year of notification and Sex Ratio was calculated. The absolute frequency and percentage for each variable studied were verified and calculated. The present study identified that the number of AIDS cases reported was significant, with the Southeast and Northeast regions having the highest percentages. The South region exhibited the highest Detection Rate in the years 2017, 2019 and 2020, as well as the North region in 2018 and 2021. Most of the young people were aged between 25 and 29 years, male, brown and had completed high school, noting the contribution of individual, social and programmatic vulnerability in this profile. Furthermore, it was noted that many reported cases corresponded to people diagnosed in previous years and that the type of sexual exposure was similar between homosexuals and heterosexuals. Therefore, individual, social and programmatic vulnerability contributes to the maintenance of this characteristic profile, being crucial the elaboration and restructuring of public policies in force to reach the current demands of young Brazilians, in situations of greater susceptibility when it relates to the three aspects of health vulnerability.

Keywords: health vulnerability; acquired immunodeficiency syndrome; epidemiology; sexual behavior.

¹ Federal University of Alagoas. Maceió/AL, Brazil. <https://orcid.org/0000-0003-1961-6262>

² Federal University of Alagoas. Maceió/AL, Brazil. <https://orcid.org/0000-0001-7413-2485>

³ Federal University of Alagoas. Maceió/AL, Brazil. <https://orcid.org/0009-0000-5367-1914>

⁴ Federal University of Alagoas. Maceió/AL, Brazil. <https://orcid.org/0000-0003-0724-7439>

⁵ Federal University of Alagoas. Maceió/AL, Brazil. <https://orcid.org/0000-0002-8058-8400>

⁶ Federal University of Alagoas. Maceió/AL, Brazil. <https://orcid.org/0000-0001-6581-6308>

⁷ Federal University of Alagoas. Maceió/AL, Brazil. <https://orcid.org/0000-0003-4787-5683>

⁸ Federal University of Alagoas. Maceió/AL, Brazil. <https://orcid.org/0000-0002-0881-1997>

INTRODUCTION

This study aims to investigate the epidemiological profile of reported cases of Acquired Immuno-deficiency Syndrome (Aids) in young Brazilians between the years 2017 and 2021 from the perspective of the concept of health vulnerability. The motivation for conducting the research arose from the importance of the theme for public health, since the understanding of these aspects can contribute to the development of coping strategies directed to the real needs of youth.

Historically, the first case of Aids in Brazil was recorded in 1980, being confirmed two years later. In Brazil, as in other countries, the history of this disease is permeated with prejudices, a fact that reverberates negatively to the present day. It was initially titled as the “*Gay Plague*”, while religious fanatics said that it had been created by a divine being to punish and even “*end*” homosexuals and, later, with African descendants, among whom the first cases were registered¹.

The emergence of the Human Immunodeficiency Virus (HIV) is seen as a historical and social factor that has brought to light a burden of health vulnerability, strengthening discrimination and stigma in some social groups. From this, many people, especially young people, became afraid to seek information, services and methods that would reduce the risk of infection, as well as to adopt safer behaviors for fear that suspicion would be raised regarding their serological state².

In 1982, Aids was called *5H* disease, since it was associated with homosexuals, hemophiliacs, Haitians, heroin addicts (users of injectable heroin) and hookers (sex workers). In the same year, the first case resulting from blood transfusion was recorded, allowing the identification of a new possible transmission factor without sexual contact, such as the use of injectable drugs or exposure to infected blood and hemoderivatives³.

Global statistics from the Joint United Nations Programme on HIV/Aids (Unaids) showed that in 2021 there were an average of 38.4 million people living with HIV in the world. About 84.2 million people have been infected with HIV since the beginning of the epidemic and 40.1 million have died from Aids-related diseases⁴. In Brazil, from 1980 to June 2022, more than 1 million AIDS cases were reported, and the number of deaths from this disease, from 1980 to 2021, was more than 300 thousand⁵.

Fear of stigma and discrimination impairs the ability and willingness of people living with HIV/Aids (PLWHA) to access and adhere to treatment. HIV-related stigma encompasses negative beliefs, attitudes and feelings towards PLWHA and other populations that are at increased risk of HIV infection⁴. Discrimination refers to the unequal and unfair treatment, by action or omission, of a person based on his/her serological state⁶.

The network of services for PLWHA is formed by PriMar.y Health Care, Testing and Counseling Centers, Drug Dispensing Units and medium and high complexity services⁷. However, the aforementioned aspects, such as stigma, discrimination and vulnerabilities (individual, social and programmatic), negatively influence the ability and willingness of these people to seek these services, which would allow early diagnosis and adherence to the treatment offered.

Among the population segments with higher risk of HIV infection, youth stands out for presenting numerous specific aspects of their age group that contribute to this greater susceptibility, such as autonomy in evolution, difficulty to control risky sexual impulses and desires, pressure of sexual partnership and use of psychoactive substances and non-adherence to preventive care (use of condoms and other methods of combined HIV prevention)⁸.

In this perspective, because of the high incidence and prevalence of disseminated Aids cases among young Brazilians (15-29 years) and because they present a higher risk of morbidity and mortality, severe immunosuppression and delays in growth or puberty, in addition to susceptibility to opportunistic infections and the spread of the virus by unprotected sexual practices, the relevance

of this study is highlighted, since it is in this age group that sexual practices usually begin, with strong presence of health vulnerability, of different forms and degrees of intensity^{8,9}.

Given the above, this study aims to describe the epidemiological profile of young Brazilians diagnosed with AIDS between the years 2017 and 2021 from the perspective of the concept of health vulnerability, comprising its three types, individual, social and programmatic vulnerability.

METHODS

This is an epidemiological study of descriptive, retrospective and quantitative approach. This type of research is used to determine the distribution of diseases or health-related conditions, according to time, place and/or characteristics of the population¹⁰.

For this investigation, consultations were carried out in the Information System of Notifiable Diseases (Sinan - *Sistema de Informações de Agravos de Notificação*) of the Ministry of Health (MH), provided by the Department of Informatics of the Unified Health System (Datasus)¹¹. Datasus provides grouped data that can support analysis of health situations and the operation and control of diseases¹².

SINAN is one of the systems of Datasus, fed by notifications and investigations of cases that are included in the national list of notifiable diseases. This tool allows the dynamic diagnosis of the occurrence of some event in a given population, which enables the creation of public policies directed to this disease¹³.

This study used the definition of young people of the Youth Byelaw provided for in Law n. 12,852, of August 5, 2013, which considers young people aged between 15 and 29 years¹⁴. Data extraction at Sinan took place during the month of February and March 2023, considering the population of AIDS cases in people aged 15 to 29 years (detailed age), which were reported from 2017 to 2021 at the national, regional and state level.

The data available until 2021 and not 2022 were chosen to be analyzed, because the year 2021 was the last whose complete data were included in the system. The choice of the period was based on the need to understand the profile of current cases, and the last 5 years were chosen as the period.

The variables were analyzed by year of notification (2017 to 2021), as follows: sex (male and female), age group (15 to 17 years, 18 to 24 years and 25 to 29 years), color (white, black, yellow, brown, indigenous), schooling (Illiterate, incomplete 1st to 4th grade, complete 4th grade, incomplete 5th to 8th grade, complete elementary school, incomplete high school, complete high school, incomplete college, complete college), notification region and residence (north, northeast, south, southeast, center-west, federal district), state (26 states and the federal district), exposure category (sexual and blood) and year of diagnosis (2017 to 2021).

To enable the calculation of the detection rate, the Brazilian population projections from 2017 to 2021 were accessed through the system of the Brazilian Institute of Geography and Statistics (IBGE). Estimates of people aged between 15 and 29 years at national and regional level were selected¹⁵. Subsequently, these data were tabulated and organized in a spreadsheet in Microsoft Excel 2013 and paired with the information extracted from Sinan.

The Detection Rate (DR) of Aids in the young population (15 to 29 years) was calculated per year of notification, a useful calculation to measure the occurrence of new cases of a given disease at a specific time, being obtained by multiplying whether the quotient between the number of cases and residents per 100,000 inhabitants, according to the formula given below¹⁶.

$$DR = \frac{\text{Number of individuals aged 15 - 29 years affected in certain year and place}}{\text{Total individuals aged 15 - 29 years in certain year and place}} * 10^5$$

Regarding the epidemiological indicator Sex Ratio (SR), which is used to measure the quantitative relationship of Aids cases between sexes¹⁵, it was obtained with the following calculation:

$$SR = \frac{\text{Number of male cases aged 15 - 29 years in certain year and place}}{\text{Number of female cases aged 15 - 29 years in the same year and place}}$$

For the analyses, in addition to the calculations mentioned above, the absolute frequency and the percentage were verified for each variable studied, and their data were presented in contingency tables and through a map of Brazil prepared in Microsoft Excel 2013.

For the analysis of the findings in the light of the concept of vulnerability (individual, social and programmatic), a search was carried out in the literature, in order to understand the aspects that favor the occurrence of Aids cases in this public, being conducted in the databases Scientific Electronic Library Online, Latin American and Caribbean Health Sciences Literature and Medical Literature Analysis and Retrieval System Online. Documents and epidemiological bulletins related to the theme were also used, made available by the MH, Unaid and other entities.

Concerning ethical aspects, since this study used a public domain platform as a secondary data source, it did not need to be submitted to the Human Research Ethics Committee, according to Resolution N. 466, 2012.

RESULTS

In Brazil, from 2017 to 2021, 27,248 cases of Aids were registered in the young population (15 to 29 years), corresponding to 14.97% of the total notifications. Of these cases, 3582 (13.14%) were registered in the North, 6170 (22.6%) in the Northeast, 10368 (38.05%) in the Southeast, 4801 (17.61%) in the South and 2327 (8.54%) in the Midwest. Case growth was observed in the first three years investigated and a decline in 2020, a period marked by the Coronavirus Disease 2019 (Covid-19) pandemic, followed by a significant increase in cases in 2021. In relation to the total number of Aids cases in young people aged 15 to 29 years per Brazilian state, Figure 1 below presents the absolute frequency.

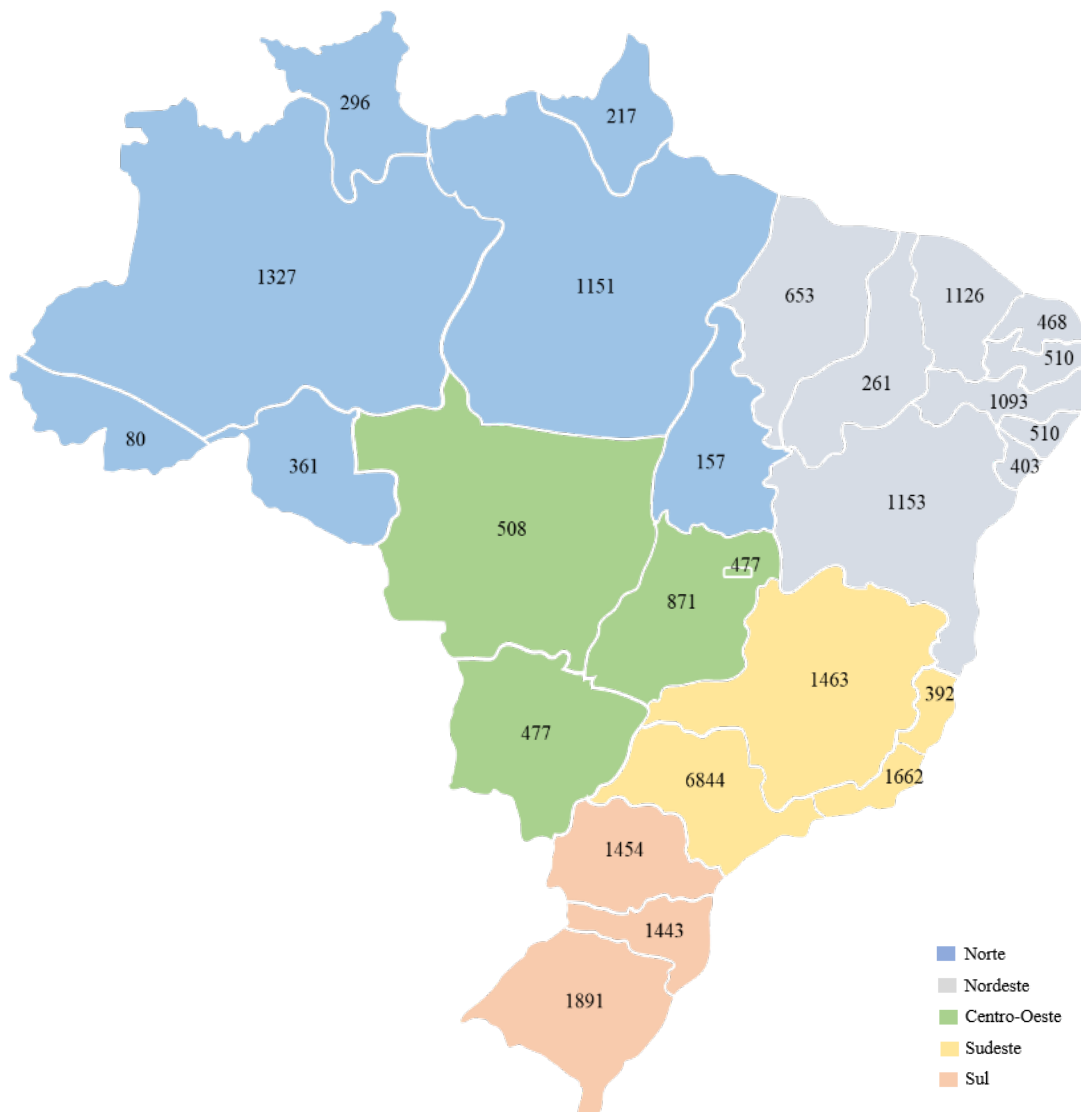


Figure translation: caption from top to bottom- North; Northeast; Midwest; Southeast; South.

Figure 1 – Number of reported AIDS cases in young people aged 15 to 29, during 2017 and 2021, by Brazilian state. Brazil, 2023.

Source: Sinan, 2023.

The Northeast and Southeast regions continue with the highest percentages of Aids cases in young people over the years, however, the highest detection rates were in the South and North Brazilian regions. In 2017, the South had the highest detection rate, with 13.96 cases per 100,000 inhabitants; in 2018, the North surpassed the aforementioned region, with 14.48; in 2019 and 2020, the South remained with the highest rates, corresponding to 17.11 and 12,52 cases, respectively; in 2021, the North surpasses the South, with 16.68 cases of AIDS in young people aged 15 to 29 years for every 100 thousand inhabitants.

In relation to the Brazilian states, in the North region, Amazonas and Pará were the locations that had the highest number of reported cases of Aids in the studied population, accounting for 68.35% of the total number of notifications in this region. In the years 2017 to 2019, Roraima was the state with the highest estimates when it comes to the detection rate, when compared to the other northern states; however, from 2020, Amazonas occupied this position.

Regarding the Northeast region, Bahia and Ceará accounted for 36.85% of the notifications. Bahia, in 2017, 2018 and 2020, had reported more cases of AIDS in this age group; in 2019 and 2021, Pernambuco. On the other hand, the highest detection rate in 2017, 2020 and 2021 was in Sergipe when calculating for every 100 thousand inhabitants; in 2018, Rio Grande do Norte; and in 2019, Paraíba.

In the Southeast, South and Midwest, in all years, São Paulo, Rio Grande do Sul and Goiás accounted for the majority of reported cases, corresponding to 66.16%, 39.38% and 33.56% of notifications, respectively. With regard to detection rates, in all years, São Paulo, Southeast state, had the highest rates; in 2017, Mato Grosso do Sul, belonging to the Midwest region; in 2017, 2019, 2020 and 2021, Santa Catarina, in the South region and, the Federal District, in the Midwest. In 2018 alone, Rio Grande do Sul had the highest detection rate in its region.

Table 1 shows complete information on the number of reported cases of AIDS in young people aged 15 to 29 years, during the years 2017 and 2021, by region and state.

Table 1 – Number of reported cases of Aids in young people aged 15 to 29, during 2017 and 2021, by Brazilian region and state. Brazil, 2023

Region/FU	Year of notification														
	2017			2018			2019			2020			2021		
	N	%	DR*	N	%	DR	N	%	DR	N	%	DR	N	%	DR
North	638	12.14	12.63	736	12.60	14.48	753	12.66	14.75	598	12.73	11.68	857	15.57	16.68
Rondônia	91	14.26	19.37	76	10.33	16.23	78	10.36	16.74	74	12.37	15.96	54	6.30	11.72
Acre	5	0.78	2.04	34	4.62	13.65	23	3.05	9.10	4	0.67	1.56	13	1.52	5.00
Amazonas	160	25.08	13.99	190	25.82	16.49	287	38.11	24.79	273	45.65	23.46	401	46.79	34.24
Roraima	58	9.09	36.83	62	8.42	37.40	78	10.36	45.07	41	6.86	23.11	57	6.65	31.78
Pará	229	35.89	9.63	301	40.90	12.62	229	30.41	9.58	147	24.58	6.14	232	27.07	9.68
Amapá	57	8.93	23.80	51	6.93	20.97	34	4.52	13.81	28	4.68	11.28	53	6.18	21.19
Tocantins	38	5.96	9.09	22	2.99	5.25	24	3.19	5.73	31	5.18	7.40	47	5.48	11.22
Northeast	1224	23.28	8.23	1383	23.67	9.37	1341	22.55	9.16	1072	22.82	7.38	1150	20.89	7.99
Maranhão	188	15.36	9.62	187	13.52	9.60	103	7.68	5.30	96	8.96	4.94	60	5.22	3.09
Piauí	70	5.72	8.08	67	4.84	7.82	55	4.10	6.49	47	4.38	5.59	37	3.22	4.44
Ceará	202	16.50	8.26	253	18.29	10.47	251	18.72	10.54	242	22.57	10.30	175	15.22	7.55
Rio Grande do Norte	81	6.62	9.08	105	7.59	11.90	85	6.34	9.74	89	8.30	10.30	107	9.30	12.49
Paraíba	110	8.99	10.84	91	6.58	9.03	159	11.86	15.92	66	6.16	6.66	85	7.39	8.65
Pernambuco	162	13.24	6.71	258	18.66	10.75	264	19.69	11.07	169	15.76	7.14	241	20.96	10.24
Alagoas	114	9.31	12.60	96	6.94	10.62	90	6.71	9.98	103	9.61	11.47	106	9.22	11.86
Sergipe	87	7.11	14.29	62	4.48	10.25	83	6.19	13.83	69	6.44	11.59	104	9.04	17.57
Bahia	210	17.16	5.56	264	19.09	7.06	251	18.72	6.77	191	17.82	5.20	235	20.43	6.48
Southeast	1986	37.78	9.78	2234	38.24	11.12	2191	36.84	11.02	1807	38.47	9.18	2150	39.06	11.04
Minas Gerais	344	17.32	6.78	370	16.56	7.37	288	13.14	5.81	221	12.23	4.52	237	11.02	4.92
Espírito Santo	81	4.08	8.59	75	3.36	8.02	96	4.38	10.33	74	4.10	8.02	64	2.98	6.99
Rio de Janeiro	385	19.39	9.90	370	16.56	9.60	368	16.80	9.64	240	13.28	6.35	295	13.72	7.90
São Paulo	1176	59.21	11.31	1419	63.52	13.80	1439	65.68	14.14	1272	70.39	12.61	1554	72.28	15.54
South	974	18.53	13.96	988	16.91	14.31	1168	19.64	17.11	845	17.99	12.52	826	15.01	12.40
Paraná	293	30.08	10.76	306	30.97	11.34	351	30.05	13.15	253	29.94	9.59	265	32.08	10.16
Santa Catarina	299	30.70	17.80	258	26.11	15.53	361	30.91	21.99	266	31.48	16.39	258	31.23	16.08
Rio Grande do Sul	382	39.22	14.85	424	42.91	16.67	456	39.04	18.13	326	38.58	13.11	303	36.68	12.36
Midwest	435	8.27	10.94	501	8.58	12.63	495	8.32	12.52	375	7.98	9.51	521	9.47	13.25
Mato Grosso do Sul	98	22.53	14.62	134	26.75	20.08	101	20.40	15.20	51	13.60	7.72	91	17.47	13.86
Mato Grosso	104	23.91	12.11	91	18.16	10.65	110	22.22	12.94	97	25.87	11.44	103	19.77	12.18
Goiás	113	25.98	6.63	154	30.74	9.05	162	32.73	9.56	135	36.00	8.00	217	41.65	12.91
Distrito Federal	120	27.59	16.16	122	24.35	16.41	122	24.65	16.38	92	24.53	12.33	110	21.11	14.71
Total	5257	100		5842	100		5948	100		4697	100		5504	100	

TD = Detection rate per 100,000 inhabitants considering regional and state population projections in the age group of 15 to 29 years per year investigated. Source: SINAN, 2023.

Regarding the sociodemographic aspects, when referring to age, during the years reported, most cases belonged to people aged 25 to 29 years (55.06%), with an increasing trend in these years. Regarding the detection rate, there was a decline only in 2020, reaching its maximum in 2019, with a ratio of 19.28 cases per 100,000 inhabitants.

Concerning sex, in all years, males corresponded to the highest number of notifications and the highest rates of detection of new cases. The sex ratio, according to the year of notification, was as follows: in 2017, 4.06 cases; in 2018, 4.11; in 2019, 4.07; in 2020, 4.36; and in 2021, 4.55 cases.

In relation to the percentage distribution by color, black and brown people corresponded to 57.33% of the notifications and white, to 36.44%. Regarding schooling, of the available data (21,361), in all the years investigated, the highest number of cases occurred in young people who had completed high school education (35.81%). The detection rate by color and schooling, and other aspects can be seen below, in Table 2.

Table 2 – Age group, sex and education of Aids cases in young Brazilians aged 15 to 29. Brazil, 2023

Age group	Year of notification															
	2017			2018			2019			2020			2021			
	N	%	DR*	N	%	DR	N	%	DR	N	%	DR	N	%	DR	
Sex																
15-17 years	138	2.63	1.40	159	2.72	1.65	137	2.30	1.46	112	2.38	1.20	118	2.14	1.28	
18-24 years	2295	43.66	9.50	2490	42.62	10.33	2532	42.57	10.55	1951	41.54	8.23	2313	42.02	9.90	
25-29 years	2824	53.72	16.46	3193	54.66	18.71	3279	55.13	19.28	2634	56.08	15.51	3073	55.83	18.06	
Total	5257	100		5842	100		5948	100		4697	100		5504			
Color																
White	2034	38.69	3.97	2208	37.80	4.35	2211	37.17	4.39	1622	34.53	3.24	1856	33.72	3.74	
Black	503	9.57	0.98	545	9.33	1.07	625	10.51	1.24	495	10.54	0.99	548	9.96	1.10	
Yellow	30	0.57	0.06	32	0.55	0.06	45	0.76	0.09	38	0.81	0.08	46	0.84	0.09	
Brown	2420	46.03	4.73	2696	46.15	5.31	2738	46.03	5.43	2290	48.75	4.58	2764	50.22	5.57	
Indigenous	19	0.36	0.04	30	0.51	0.06	26	0.44	0.05	18	0.38	0.04	28	0.51	0.06	
Ignored	251	4.77	0.49	331	5.67	0.65	303	5.09	0.60	234	4.98	0.47	262	4.76	0.53	
Total	5257	100		5842	100		5948	100		4697	100		5504	100		
Schooling																
Illiterate	25	0.61	0.05	25	0.54	0.05	29	0.62	0.06	24	0.65	0.05	17	0.39	0.03	
Incomplete 1 st - 4 th grade	142	3.45	0.28	141	3.07	0.28	126	2.71	0.25	68	1.85	0.14	99	2.29	0.20	
Complete 4 th grade	102	2.48	0.20	106	2.30	0.21	103	2.22	0.20	70	1.91	0.14	84	1.94	0.17	
Incomplete 5 th - 8 th grade	648	15.73	1.27	639	13.89	1.26	623	13.42	1.24	429	11.68	0.86	467	10.80	0.94	
Complete elementary school	389	9.44	0.76	414	9.00	0.81	402	8.66	0.80	286	7.78	0.57	343	7.93	0.69	
Incomplete high school	477	11.58	0.93	519	11.28	1.02	595	12.82	1.18	464	12.63	0.93	597	13.80	1.20	
Complete high school	1341	32.55	2.62	1562	33.96	3.07	1641	35.35	3.26	1403	38.19	2.81	1703	39.38	3.43	
Incomplete college	544	13.20	1.06	674	14.65	1.33	558	12.02	1.11	464	12.63	0.93	494	11.42	1.00	
Complete college	452	10.97	0.88	520	11.30	1.02	565	12.17	1.12	466	12.68	0.93	521	12.05	1.05	
Total	4120	100		4600	100		4642	100		3674	100		4325	100		

DR = Detection rate per 100,000 inhabitants considering the projections of the country's national population in the age group of 15 to 29 years old per year investigated. Note: in the age group variable, the detection calculation was carried out with specific projections for each age group, that is, from 15 to 17 years old, from 18 to 24 and from 25 to 28 years old. Source: SINAN, 2023.

Regarding the year of diagnosis and notification, many reported cases corresponded to people diagnosed in previous years, with the following percentages of occurrence in the same year: in 2017, 5257 (81.22%) cases; in 2018, 4853 (78.81%); in 2019, 4827 (78.58%); in 2020, 3699 (76.58%); and in 2021, 4362 (77.77%) cases reported and diagnosed in the same year.

Considering the category of exposure, sex overlapped the others, with 23059 (84.62%) of the cases; of these, the homosexual corresponded to 51.64% of the notifications. The detection rate, in homosexual exposure, in 2017, 2018 and 2020, was higher than 4 cases per 100,000 inhabitants; in 2019 and 2020, it was higher than 5. In the heterosexual exposure category, the case detection rate in 2019 was higher than 4 and in the other years it was higher than 3 (Table 3).

Table 3 – Exposure category for young people aged 15 to 29, from 2017 to 2021. Brazil, 2023

Exposure category	Year of notification															
	2017			2018			2019			2020			2021			
	N	%	DR*	N	%	DR	N	%	DR	N	%	DR	N	%	DR	
Sex	Homosexual	2141	40.73	4.18	2535	43.39	4.99	2576	43.31	5.11	2101	44.73	4.20	2555	46.42	5.15
	Bisexual	391	7.44	0.76	393	6.73	0.77	446	7.50	0.88	371	7.90	0.74	408	7.41	0.82
	Heterosexual	1919	36.50	3.75	2005	34.32	3.95	2046	34.40	4.06	1516	32.28	3.03	1656	30.09	3.34
Blood	UDI*	89	1.69	0.17	122	2.09	0.24	96	1.61	0.19	73	1.55	0.15	97	1.76	0.20
	Hemophiliac	2	0.04	0.00	1	0.02	0.00	0	0.00	0.00	3	0.06	0.01	0	0.00	0.00
	Transfusion	1	0.02	0.00	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00	2	0.04	0.00
	Vertical Transmission	78	1.48	0.15	70	1.20	0.14	58	0.98	0.12	53	1.13	0.11	81	1.47	0.16
	Ignored	636	12.10	1.24	716	12.26	1.41	726	12.21	1.44	580	12.35	1.16	705	12.81	1.42
Total	5257	100.00		5842	100.00		5948	100.00		4697	100.00		5504	100		

DR = Detection rate per 100,000 inhabitants considering the projections of the country's national population in the age group of 15 to 29 years old per year investigated.

Source: SINAN, 2023.

DISCUSSION

To analyze the findings, the relevant literature was used in order to understand the factors that influence the epidemiological profile exposed in this study from the concept of health vulnerability, in its three different aspects (individual, social and programmatic)¹⁷.

Individual Vulnerability and its Association With Cases of Young People Diagnosed With Aids

Individual vulnerability, also called biological or personal, refers to what a person, in his/her singularity, thinks, does and wants, exposing him/herself or not to the acquisition of a health problem. In the context of HIV/Aids transmission, it is associated with profiles and behaviors that create the possibility of becoming infected and/or ill¹⁷. From this perspective, and consistent with other findings, this study observed an individual vulnerability mostly higher in young people aged 25-29 years, in males, in homosexuals, and in black and brown people.

Overall, the most recent research on the involvement of this pathology in the world, and especially in Brazil, has pointed to a significant increase in cases in young people. Although Aids has been included in the National Compulsory Notification List since 1986, the notification of cases of HIV infection in our country only became mandatory in 2014, which may have strengthened the increase

in recent years¹⁸. However, it is necessary to recognize that this prevalence is also associated with the increasingly early onset of unprotected active sexual life.

According to researchers in the field, the average age of first sexual intercourse with penetration in Brazil is 14 years and four months for males and 15 years and two months for females¹⁹. Data from 2021, from the Ministry of Health (MH), corroborate this research, which found that there was an increase of 29.0% of HIV cases in the age group of 15 to 29 years²⁰. On the other hand, Caran and collaborators stated that AIDS cases, between 2010 and 2020, showed stability with a decreasing trend, probably due to the benefits of Antiretroviral Therapy²¹.

In 2020, approximately 31% of HIV infections occurred in adolescents aged between 15 and 24 years, mainly through sexual transmission, being one of the main causes of death in adolescents in low- and middle-income countries. When compared to other populations, they face parental consent barriers to access sexual and reproductive health services, which are influenced by social dynamics of parental power, and inadequate and insufficient access to age-appropriate sex education, which contributes to the late identification of HIV infection, greater dissemination of the virus and the development of Aids²².

According to the MH Epidemiological Bulletin, published in 2018, the number of men living with HIV/Aids is higher than that of women, with a ratio of 26 men for every 10 women²³. A survey conducted in Brazil between the years 2007 and 2017 showed not only the predominance of cases in men, but also the increase in cases in this group over the period of the study, and in contrast, falls in women in almost all age groups²⁴.

Collaborating with the above, a systematic review with meta-analysis on the absence of men from the continuity of HIV care in sub-Saharan Africa showed that they are vulnerable throughout the care process, especially men who make sex with men, presenting higher mortality due to diseases related to HIV²⁵.

One of the explanations found in the literature for these points mentioned is the fact that men - especially at younger ages - tend to have a greater number of successive or simultaneous partners, and to engage in unstable relationships, in which sexual relations are not always protected, due to the strong habit of condom disuse²⁶.

Such behavior may be intrinsically linked to a patriarchal society, predominantly sexist, a factor that contributes, to the present day, to the difficulty of men to perceive themselves as vulnerable and to seek information about their health. Therefore, at the end of the last decade, the expression "toxic masculinity" has been used to describe, with a critical tone, a series of behaviors related to the supposed belief of male superiority, which forms this virile image and expresses a masculine pattern^{27,28}.

Gender differences, depending on the social, geographical and cultural context, place women at greater risk of HIV infection, fact raised by a systematic review that analyzed gender differences in knowledge related to HIV among adolescents and young people from low- and middle-income countries, concluding that male adolescents had higher scores in relation to composite knowledge, forms of transmission, prevention, attitudes and sexual decision making²⁹.

Concerning the exposure category, there was a predominance in the homosexual group when compared to heterosexual and bisexual, especially in 2019. A survey conducted in the state of Goiás identified that 43.4% (n=3,291) of the notified people acquired the virus through homosexual intercourse, 35.4% (n=2,684) through heterosexual practice. With regard to color, this same research also pointed to a prevalence in brown color, followed by whites and blacks, partially differing from the present study³⁰. These data indicate the need to encourage condom use by all young people, regardless of sexual orientation, and prevention measures that reach the black/brown population.

Finally, young people have health-related needs specific to their age group, such as adolescents living with HIV in sub-Saharan Africa. A systematic review on the subject found as needs psychosocial aspects (reduction of stigma, maintenance of privacy and difficulty in accepting the serological state), care dependence, self-management needs (better coping, support and adherence to treatment and minimization of the side effects of therapy), non-responsive health services (health institutions and non-embracing and problem-solving schools), need for food, financial, material support, adequate information, among others³¹.

Social Vulnerability and its Historical Repercussion in the Context of HIV/Aids

When entering the issue of social vulnerability, it is necessary to clarify its main concept, which refers to the environment in which the individual is inserted and the possibilities of facing social, cultural, economic, health barriers, among others.

When related to economic characteristics, low- and middle-income countries have greater difficulty in coping with the HIV/Aids epidemic, due to factors related to political, cultural, infrastructure, location and economic disparities³².

That said, to strengthen the understanding on the subject, it is worth exposing a brief historical context on the model of care for PLWHA, which, in the twentieth century, correlated with the initial epidemiological pattern of the disease, considered an acute infectious disease, of high morbidity and mortality, which affected populations with specific vulnerabilities and was mainly concentrated in large urban centers^{33,34}.

Thus, in addition to the limitations of public policies implemented, another aggravating aspect for the health status of PLWHA is co-infection by opportunistic diseases. Nevertheless, this does not always follow a linear succession of facts, such as: infection by HIV → immune deficiency → non-adherence to treatment → tuberculosis infection. In this scenario, it is perceived that the succession of everyday events and the difficulties of diagnosis and treatment may have been aggravated by the social situation in which the subjects were (street situation, sex worker, imprisonment in the prison system)³³.

Other crossings that mark the picture of illness by co-infection are situations of violence and drug use, life scenarios marked by social, cultural, material and political adversities. Such situations are not always the object of attention in health services and, often, their effects are not considered in the composition of the clinical picture of people living with HIV/Aids³³.

In other words, in view of trajectories marked by adverse situations, marginalization and social exclusion, studies suggest that the production of health care is built from a political solidarity or brotherhood, which mediates the relationship with health devices, as well as the subject's experience with HIV/Aids³⁵.

Another striking factor of social vulnerability is the stigma that people living with HIV/ AIDS suffer daily, being characterized by labels, stereotypes, segregation, devaluation and discrimination of these people because of their serology, leading them to a continuous cycle of social marginalization, worsening health with delay in seeking health services and treatment, affecting the physical and mental health and quality of life of these young people³⁶.

Therefore, it is necessary to understand how stigma and discrimination are operated in society to produce and reproduce social and health inequities. Studies indicate that health and HIV prevention actions should not be limited to behavioral aspects and risk practices, but should advance in promoting a culture of non-discrimination and respect for gender differences³⁷.

Thus, in relation to social and health inequities, it is clear to perceive a recurrence among the results related to the consumption of alcohol, tobacco and illicit drugs - social vulnerability factors associated with stigma and addiction, also considered as an individual susceptibility -, either to escape

the reality of suffering or to seek an improvement of general well-being. Thus, this overlapping of vulnerabilities can increase exposure to HIV in the young population. In addition, sex and age, as well as co-infection by other communicable diseases and history of incarceration, are also factors that arouse discrimination in our society, although at different levels³⁸.

Programmatic Vulnerability and its Relationship with Difficulty in Following Care in Health Services

Health vulnerability concerns a condition of human life expressed in all its dimensions (individual, social and programmatic) and its essential elements: the subject and the social³⁹. The programmatic dimension includes the access, organization, user bonding, recommended actions and social resources of health services⁴⁰.

The Unified Health System (UHS) is constituted from principles that cover the universalization of access, comprehensive care, equity, decentralization of management, hierarchy of services and social control. Thus, the implementation of this system presupposes the reorganization of health practices and, consequently, the transformation of the care model and the organization of the service in the care of PLWHA⁴¹.

Among the elements of organization of services, programmatic or institutional vulnerability is highlighted, which is associated with the existence of policies and organized actions to face the problem of HIV/Aids, that is, it refers to the social resources that people need in order not to expose themselves to complications and protect themselves from their harm¹⁷.

Today, there is a significant expansion of public policies and services aimed at PLWHIV and those who are at greater risk of infection (greater programmatic vulnerability) worldwide, but inadequate access to these services still remains a barrier faced by many and relates to other types of vulnerability, the individual and social, which contribute to the difficulty of seeking and accessing these services⁴².

In line with what was said above, studies indicate that the programmatic aspects went through continuity crises, such as: financing and sustainability, as well as irregularity and lack of monitoring and evaluation of the actions developed. In addition, there was a fragmentation in the deviations of prevention efforts for homosexuals by shifting the priority and funding of actions to other vulnerable groups through the characterization of trends – which have not always been confirmed – as well as the direction resources for Aids policies to promote homosexual citizenship, without ensuring the development of specific prevention actions.⁴³

Recently, the Ministry of Health published the material “*combined prevention for HIV*”, assuming that different approaches should be reconciled in a joint strategy, in which the parties should not be dissociated from the whole that they make up. This document includes the combination of three approaches to HIV prevention: the structural approach, the behavioral approach and the biomedical approach³⁴.

Combined HIV prevention actions encompass key populations - but not only them - due to the fact that they are more vulnerable to HIV, mainly for structural and programmatic reasons, being made up of gays and other men who have sex with men, people who use alcohol and other drugs, sex workers, trans people and people deprived of liberty. Moreover, other population segments that are more vulnerable to HIV than the average population are included, which makes specific prevention actions necessary, namely: black, young, homeless and indigenous population³⁴.

Finally, a limitation in this study concerns the few variables used for the notification of AIDS cases, which prevents the understanding of the phenomenon in its entirety.

CONCLUSION

Through this research, it was possible to identify factors that reflect the profile of young Brazilians diagnosed with Aids in the last 5 years. This study showed an important growth related to notifications and diagnoses, maintaining a characteristic sociodemographic profile.

The numbers of Aids cases recorded in the young Brazilian population (15 to 29 years) were high, and the Southeast and Northeast regions had the highest percentages of cases. The detection rate (DR) evaluation showed that the South region exhibited the highest rate in the years 2017, 2019 and 2020, as well as the North region in 2018 and 2021.

Most of the reported cases were aged between 25 and 29 years, belonged to the male sex, brown color, people with complete high school, and the year of 2017 most reported and jointly diagnosed cases of Aids, and sex was the main exposure category.

Thus, it is necessary to develop public policies based on the minimization of individual, social and programmatic vulnerability, also considering the impacts of social determinants and sociodemographic factors so that sMar.t, effective and appropriate measures are implemented to promote and recover health and prevent new cases of Aids.

New studies should be developed aimed at raising awareness of the young population regarding the prevention of HIV/Aids and its etiological aspects and investigations regarding the use of preventive methods for Sexually Transmitted Infections in this population. It is also expected to boost the interest of researchers to insert this significant theme in Brazilian research projects.

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Anderson da Silva Moreira: Conceptualization; Data curation; Formal analysis; Investigation; Methodology, Writing – original draft; Visualization; Writing – review & editing.

Lavínia Helena Rufino da Silva: Conceptualization; Formal analysis; Investigation; Methodology; Writing – original draft.

Thatiana da Fonseca Peixoto: Conceptualization; Formal analysis; Investigation; Methodology; Writing – original draft.

Isaías Vicente Santos: Conceptualization; Formal analysis; Investigation; Methodology; Writing – original draft.

Thaís Honório Lins Bernardo: Writing – original draft; Writing – review & editing, Supervision; Methodology; Formal analysis; Conceptualization.

Mar.iana Kissia Santos Lins de Carvalho: Conceptualization; Formal analysis; Writing – original draft.

Mirana Moura Licetti: Conceptualization; Formal analysis; Writing – original draft.

Rossana Teotonio de Farias Moreira: Writing – original draft; Writing – review & editing; Formal analysis; Conceptualization.

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Corresponding author

Anderson da Silva Moreira

Escola de Enfermagem da Universidade Federal de Alagoas

Av. Lourival Melo Mota, S/n – Tabuleiro do Mar.tins, Maceió/AL, Brasil.

moreiraanderson3214@outlook.com_

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