

## **AGGRESSIONS BY FIREARM IN THE NORTHEAST OF BRAZIL BETWEEN 2007 AND 2022**

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**Abstract: Introduction:** Crime in Brazil has alarming levels making it a country with several capitals being considered the most dangerous cities in the world. Most of these cities are located in the northeast of the country, with the region with the highest case of firearm hospitalizations and deaths in Brazil. **Objective:** Describe the epidemiological profile of hospitalizations due to aggression by firearm firing from the northeastern states of Brazil. **Methodology:** This is a descriptive observational study, whose data were collected by the Datasus platform. The collection was started from the Hospital Information System (SIH), through hospital morbidity data by hospitalization place between January 2007 to December 2022. The category of diseases used were: firearm firing aggression ; by shooting shotgun, carbine or gun with larger caliber; by shooting other firearms or unspecified weapons. **Results and Discussion:** The Brazilian Northeast has shown growth in assault deaths since 1996, reaching maximum peak in 2017 with 65,602 cases. It was observed that few people are victimized by homicides if they have more than 12 years of study. The Northeast is the most violent region in the country in terms of firearm hospitalization and aggression by shooting shotgun, carbine or larger firearm. Among the northeastern states, only two of them account for more than 72% of cases in the region; Ceará (38.4%) and Bahia (33.7%). The most affected age group in all states is between 20 and 29 years old. The range between 15 and 39 years is approximately 81.9% of all cases. The average mortality rate of the Northeast is 8.58%, ranging from the states. The proportion of hospitalized men is 10 times larger than women. Among the patients who declared information on color 82.5% are brown. **Conclusion:** The Northeast was the region with the highest

hospitalization rate for aggression to the large and large firearm in the last two decades. In addition, the population most affects the population is formed by men between 20 and 29 years old, brown and low education.

## INTRODUCTION

Crime in Brazil is a rooted problem responsible for inserting the country at above world average regarding violent crimes, with high levels of armed violence and homicides. The Northeast region, in particular, is a region with a high rate of homicides for many decades.<sup>1</sup> In the 2021 ranking of the 50 most violent cities in the world, according to the Mexican non-governmental organization Citizen Council for Public Security and Criminal Justice, nine of them are in the northeast of Brazil.<sup>2</sup> The homicide rate of men and women by firearms in Brazil in 2019 was 27.9 and 1.7, respectively. When analyzed in isolation, the same rate for men and women in the Northeast is 47.17 and 2.66, well above the national average.<sup>3,4</sup>

In the early 1980s in the Northeast, they were smaller than the World Health Organization (WHO), for example: less than 10 homicides for each group of 100,000 inhabitants.<sup>5</sup> To understand the causes of increased northeastern crime, as in other regions is complex, and some factors are clearly contributory for the establishment of the current framework. The expansion of activities related to drug trafficking, which settled in the region quickly and with little resistance is one of them. Years ago, the gangs were centralized from the southeastern region of the country. With the beginning of the policies of repression of trafficking, especially in the pacification of Rio de Janeiro and the disarticulation of organizations in São Paulo, criminals were forced to migrate to other states. Another factor is related to the logistics of sending narcotics outside the

country. With increasing inspection in the port of Santos, until then the most used as a means of drug exports, other ports, especially in the Northeast region, began to be used as an alternative and expansion of crime, such as the Pecém complex in Ceará and The port of Suape in Pernambuco.

Through their escape to northeastern cities and without effective measures to combat trafficking, the states of the region were truly invaded and dominated, enhancing their fatalities, because where traffic is installed multiplies. Today, studies by state public safety departments indicate that more than 60% of homicides have a direct connection with drug trafficking.<sup>6-9</sup> Civil disarmament policies were implemented and with great adhesion, however, did not produce significant effects on reducing the number of homicides.<sup>10</sup> Proof of this are the main capitals of the region (Salvador, Fortaleza, Natal, Recife and Teresina) are in the ranking of the most violent in the world, except for the countries at war.

Among all cases of aggression hospitalization in Brazil between 2007 and 2022, about 28% were due to the use of firearms.<sup>11</sup> In the Northeast, in particular, this number reaches approximately 36%. Thus, this work seeks to describe the epidemiological profile of hospitalizations due to aggression through firearm firing from the northeastern states of Brazil.

## METHODOLOGY

It is a quantitative descriptive ecological observational study, whose objective is to understand the epidemiological distribution of aggression hospitalization by shooting a firearm, ICD10 - X93, in Northeast Brazil. The data were collected by the Datasus platform, through the information obtained by the Notification Disease Information System (Sinan). The collection began from the

Hospital Information System (SIH), through hospital morbidity data by hospitalization place from January 2007 to December 2022.

The study population is composed of patients who were admitted to any northeastern territory hospital, both sexes and all age groups. The information was characterized by northeastern states according to hospitalizations per year of service. The indicators used were: gender, age, color/breed, deaths and mortality rates. The study was conducted in line with the principles of Resolution 466/2012 of the National Health Council of Brazil.

## RESULTS AND DISCUSSION

The theory of opportunities points out that in more developed municipalities there are more wealth available, more motivated offenders and fragile coercion mechanisms. The statistical models cited by the authors relate socioeconomic variables to crime rates. On the other hand, the same authors demonstrated that inequality and poverty, despite impacting crime rates, little influences violent crime. Regression and correlation models showed low significance of relationship between poverty/ inequality and violent crime. This was defined as violent crimes against the person, violent crimes against heritage, theft, armed theft and vehicle theft and vehicle robbery. Poverty/inequality indicators were the coefficient of Gini and the percentage of heads of family with less than one minimum wage.<sup>12</sup>

In the same work, these authors pointed to a significant significance between drug incidence rates and homicides, greater than the relationships found between socioeconomic variables and homicidal violence. The main results of the work of Beato and Reis (2000) show that violent crime against heritage is more related to socioeconomic variables, and violent crime against life (homicides)

has a strong connection with drug use and ineffectiveness of the coercive apparatus.<sup>13</sup>

The Brazilian Northeast has been with constant growth of aggression deaths since 1996, with 28,555 deaths, to 2019, with 45,503 deaths; Index that reached maximum peak in 2017 with 65,602 cases. Schooling is an independent variable that stands out as important in homicide studies. In addition, it is observed that few people are victimized by homicides if they have more than 12 years of study.

Historically, the Northeast is the most violent region in the country in terms of hand weapon hospitalization with 50,637 cases between 2007 and 2022 notified by Sinan. The second state with the most cases is the Southeast with 34,287, followed by the North (15,416), Midwest (4,718) and South (4,257). In terms of aggression by shooting shotgun, carbine or larger firearm the Northeast remains the most affected region with 7,041 cases, followed by the Southeast (4,730), South (1,905), North (1,814) and Center regions. -Oeste (1,565). However, when analyzed aggressions by shooting other firearms or unspecified weapons, the Southeast is the most affected region with 31,732 cases, followed by the Northeast with 21,050 hospitalizations.

Among the northeastern states, only two of them account for more than 72% of cases in the region **Table 1.0**. Ceará was the one that had the highest hospitalization rate with 38.4% of cases, followed by Bahia with 33.7%. Rio Grande do Norte and the state of Alagoas occupy the third and fourth position with 10.9% and 10.3%, respectively.

A change in the profile of trafficking already makes the Northeast a corridor for driving drugs abroad. The circulation of narcotics is no longer restricted to the Midwest and Southeast regions. The drugs leave Brazil and go to the Republic of "Cabo Verde", a country strategically located in the Atlantic

Ocean. From there, they go to Europe. The municipality of Fortaleza, Ceará, is one of the places used to send the drug. In 2013, a new direct flight was inaugurated, linking the capital of Ceará to the city "Praia", in "Cabo Verde". Which contributed to intensify the action of traffickers. With this, surveillance at Pinto Martins International Airport had to be intensified, both in the passenger and cargo sector. Most of the drugs coming out of the city comes from Bolivia and Colombia. The PF knows that the entry of the drug in Brazil is through borders with the states of Mato Grosso, Mato Grosso do Sul and also by Amazonas.

This information confirms what the National Confederation of Municipalities (CNM) had already warned in its study the crack on the Brazilian border. Through contact with border managers, the material presents the reality of these cities and the difficulties in dealing with the issue of drugs. Once within the country, narcotics are sent to the municipalities: Natal (RN), Recife (PE) and Salvador (BA). Source: CNM Agency, with information from Portal R7.

The most affected age group in all states is between 20 and 29 years old. The range between 15 and 39 years old affects approximately 81.9% of all cases. The number of hospitalizations in the state of Ceará, in which patients are between 20 and 29 years old has more than double all patients, among all age groups, from the states of Piauí, Maranhão, Paraíba, Pernambuco and Sergipe.

The average mortality rate of the Northeast is 8.58%, ranging from the states. Although Alagoas is the 7th state in number of hospitalizations, it is the place with the highest mortality rate (12.68%) followed by Ceará with 10.85% **Table 2.0**. The rate also varies according to the patient's age. The lowest rate is in individuals between 5 and 9 years (5.93%) and the highest in those over 80

years (18.18%).

The rate of firearm homicides in the Northeast in 1989 was 8.49 per 100,000 inhabitants. In 2019, this amount almost tripled reaching 24.78 cases per 100,000 inhabitants. However, observing the chart of rates in recent years, it is clear that from 2018 there has been a drop in the amount of homicides **Figure 1.0**.

The proportion of hospitalized men is 10 times larger than women. Of the 50,637 cases, 46,266 were male and 4,371 female. Only men admitted to Ceará (17,700) is the equivalent of all patients in the other northeast states except for Bahia. Patients who declared information on color 82.5% are brown, 7.8% yellow, 7.2% white, 2.3% black and 1.5% indigenous.

The average hospital hospitalization cost also varies according to the regions. In Piauí, for example, the average cost per person between 2007 and 2022 was R \$ 982.38. In Bahia the cost was R \$ 2,264.17. Since 2007, the Northeast required R \$ 108,140,397.13 with hospitalization. Ceará and Bahia were responsible for R \$ 82,188,670.53 of this value (approximately 76%), having a major impact on state public coffers.

## CONCLUSION

The Northeast was the region with the highest hospitalization rate for aggression to the large and large firearm in the last two decades. In addition, the population most affected is formed by men between 20 and 29 years old, brown and low education. The hardest affected states are Ceará and Bahia, which have more than 80% of cases together. The crime rate in these states, as well as throughout the Northeast, has grown in recent years, in addition to the socioeconomic impacts of the region, due to the migration of trafficking from the Southeast region, but these states that had lower supervision.

Region/Federation unity	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
TOTAL	133	2.265	3.390	3.436	3.341	3.776	4.212	3.692	3.290	3.532	4.216	3.799	2.554	3.408	3.213	2.380	50.637
Northeast Region	133	2.265	3.390	3.436	3.341	3.776	4.212	3.692	3.290	3.532	4.216	3.799	2.554	3.408	3.213	2.380	50.637
Maranhão	1	5	17	17	20	36	65	197	38	46	57	41	41	162	210	183	1.136
Piauí	0	8	9	5	13	8	4	2	3	3	4	1	5	8	15	7	95
Ceará	43	630	1.014	1.210	1.157	1.358	1.799	1.570	1.465	1.334	1.879	1.613	825	1.415	1.193	940	19.445
Rio Grande do Norte	12	255	369	435	462	432	350	298	295	435	532	527	401	360	253	147	5.563
Paraíba	10	42	29	70	42	32	29	52	31	22	27	33	34	44	37	12	546
Pernambuco	0	1	67	59	140	156	114	33	38	13	44	82	69	65	36	49	966
Alagoas	17	206	494	424	489	529	606	423	298	401	296	312	193	153	214	181	5.236
Sergipe	0	6	40	8	8	22	14	16	23	33	196	45	19	68	61	33	592
Bahia	50	1.112	1.351	1.208	1.010	1.203	1.231	1.101	1.099	1.245	1.181	1.145	967	1.133	1.194	828	17.058

Table 1.0 Number of patients admitted by firearm firing notified by state in the Northeast between 2007 and 2022.

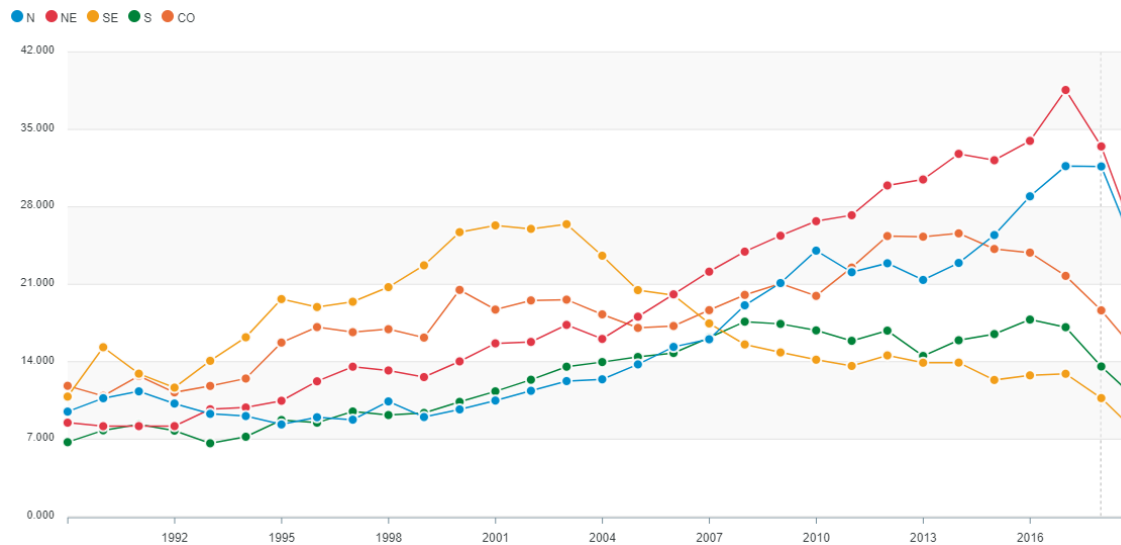
Source: Ministry of Health – SUS (Unified Health System) Hospital Information System (SIH/SUS), 2023.

Region / Federation unity	Minor 1 year	1 to 4 years	5 to 9 years	10 to 14 years	15 to 19 years	20 to 29 years	30 to 39 years	40 to 49 years	50 to 59 years	60 to 69 years	70 to 79 years	80 years and more	Total
TOTAL	100	170	337	1.318	10.976	20.929	9.572	4.216	1.863	798	259	99	50.637
Northeast Region	100	170	337	1.318	10.976	20.929	9.572	4.216	1.863	798	259	99	50.637
Maranhão	1	9	5	25	199	427	240	139	52	27	11	1	1.136
Piauí	0	0	1	4	10	35	22	12	8	2	1	0	95
Ceará	46	64	119	559	4.340	7.935	3.649	1.577	740	277	93	46	19.445
Rio Grande do Norte	10	23	33	134	1.145	2.249	1.110	492	192	115	48	12	5.563

Paraíba	4	2	0	15	88	221	95	68	28	20	2	3	546
Pernambuco	1	1	0	10	209	400	228	65	35	10	6	1	966
Alagoas	16	16	27	122	1.155	2.181	946	437	208	85	30	13	5.236
Sergipe	2	4	2	7	104	262	134	53	18	5	0	1	592
Bahia	20	51	150	442	3.726	7.219	3.148	1.373	582	257	68	22	17.058

Table 2.0 Distribution by age group of the population hospitalized by firearm firing notified by state in the Northeast region between 2007 and 2022.

Source: Ministry of Health - SUS (Unified Health System) Hospital Information System (SIH/SUS). 2023.



Subtitle: N = north; NE = Northeast; SE = Southeast; S = south; CO = Midwest.

Figure 1.0 Firearm homicide rate between 1989 and 2019.

Source: Institute of Applied Economic Research. Atlas of violence. Firearm homicide rates. 2023.

## CONFLICT OF INTERESTS

There is not any.

## FINANCING

The own researchers.

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