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Characterization of homicide and associated factors with use of drugs in a state capital city in Northeast Brazil

Caracterização de homicídios e aspectos associados ao uso de drogas ilícitas em uma Capital no Nordeste Brasileiro

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ABSTRACT

Introduction: Homicide is a public health problem in Brazil that is often related to illicit drugs. **Objective:** To characterize homicides and aspects associated with the use of illicit drugs. **Methods:** A cross-sectional study with a quantitative approach carried out in Joao Pessoa, in the state of Paraiba, Brazil, in 2014. 424 homicide victims whose data were collected through a specific instrument were considered, analyzed descriptively and analytically with the aid of statistical software, with Chi Squared Test and Robust Poisson Regression, considering a confidence level of 95% and statistical significance when p<0.05. **Results:** Prevalence of homicide victims (93.2%), non-whites (97.2%), with up to 30 years, considering the age groups below 20 years (22.6%), 20-24 (26.7%) and 25 to 29 (18.8%), with less than seven years of study (67.5%), with a history of involvement with illicit drugs (72.5%) and incarceration (59.7%). There was an association between involvement with illicit drugs with sex (p=0.037), age (p=0.002) and history of incarceration (p<0.001). There was a 67% higher prevalence of involvement with illicit drugs among those with a history of incarceration (PR: 1.67, 95% CI: 1.44-1.94) and 28% lower among individuals aged 30 years or older (PR: 0.72, CI: 0.58-0.88). **Conclusion:** Homicide is part of a complex set of social issues, including involvement with illicit drugs, which is more prevalent among young adults and individuals with a history of incarceration.

Keywords: violence; mortality; homicide.

RESUMO

Introdução: O homicídio é um problema de Saúde Pública no Brasil não raro relacionado com drogas ilícitas. **Objetivo:** Caracterizar os homicídios e os aspectos associados ao uso de drogas ilícitas. **Métodos:** Estudo transversal, com abordagem quantitativa, realizado em João Pessoa, no estado da Paraíba, no Brasil, em 2014. Consideraram-se 424 vítimas de homicídios cujos dados foram coletados através de um instrumento próprio, analisados com auxílio de software estatístico, com Teste de Qui-Quadrado e Regressão Robusta de Poisson, considerando um nível confiança de 95% e significância estatística quando p<0,05. **Resultados:** Predominância de vítimas de homicídios homens (93,2%), não brancos (97,2%), com até 30 anos, considerando as faixas etárias de menor de 20 anos (22,6%), de 20 a 24 (26,7%) e 25 a 29 (18,8%), com menos de sete anos de estudo (67,5%), com histórico de envolvimento com drogas ilícitas (72,5%) e de encarceramento (59,7%). Observaram-se associações entre envolvimento com drogas ilícitas e as variáveis: sexo (p=0,037), idade (p=0,002) e histórico de encarceramento (p<0,001). A prevalência ajustada de envolvimento com drogas ilícitas foi 67% maior entre aqueles com histórico de encarceramento (RP: 1,67; IC95%: 1,44-1,94) e 28% menor entre indivíduos com 30 anos ou mais (RP: 0,72; IC: 0,58-0,88). **Conclusão:** O homicídio está inserido em um quadro de complexas questões sociais, dentre as quais se insere o envolvimento com drogas ilícitas, e é mais prevalente entre indivíduos com histórico de encarceramento e menos prevalente entre os de mais de 30 anos.

Palavras-chave: violência; mortalidade; homicídio.

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INTRODUCTION

Homicide, interpersonal injury infringed per any means and with lethal outcome, has high social impact, and not by chance has been considered the main indicator of violence; which has a significant effect on populations in a number of countries, particularly the peripheral and developing[1].

In Latin America, from 1999 to 2009, it is concluded that the countries with the highest homicide rates, considering a base of 100 thousand inhabitants, were El Salvador (62.9), Guatemala (51.2), Colombia (42.5), Venezuela (33.2) and Puerto Rico (25.8). In the same period, it was found that in the case of Brazil, although with a lower rate than those (25.2), which remained relatively stable, is still about four times higher than the world average[2,3].

Indeed, considering the Brazilian context, in 2014, year of the present study, 59.681 homicides were recorded, and, the state of Paraiba, in the northeastern region, which has systematically presented, increase in the aforementioned injuries, 1.522 were reported, representing 39.3 deaths per 100 thousand inhabitants. Highlighting its capital, João Pessoa, scenario of the present study, with just over one third of the deaths, a result that made it occupy in *ranking* among all the other capitals[4,5].

Disregarding the aspects presented, it is certain that homicide is the expression of violence that has demanded attention, especially because it does not reach the population in a homogeneous way, but rather unevenly, has been noticed in all studies on these themes, and although the growth of feminicide statistics has been consistently reported[6], its highest incidence among young, black, low-educated men[7,8], from the outskirts of large urban centers[9], and among those with some kind of involvement with illicit drugs[10]. Reveals, a number of factors related to the offense in question are revealed, particularly those of a socioeconomic nature and the issue of drug use and trafficking, especially[11,12].

Thus, if, on the one hand, the increase in homicide studies can contribute to reinforce the intrinsic relationship between these and widely known socioeconomic aspects, by the way, when it includes the theme of illicit drugs, as it did not present any study, it is even more relevant in that it can contribute to discussions and operationalization of actions on issues such as legalization and decriminalization, which are certainly on the agenda.

This study, in particular, which merits the use of police investigations, not information systems data, therefore it allows exploring aspects that cannot be gauged through those, besides the theoretical contribution, it also has practical applicability. That is why with a greater understanding of these grievances one can contribute beyond the context of public security, and it is important to subsidize or delineate intersectoral policies that involve different political actors, especially in the context of the economic crisis and current fiscal austerity, which will certainly further impact the reality in the coming decades.

Given the exposed, this study aims to characterize homicides and aspects associated with illicit drug use in João Pessoa, one of the capitals of northeastern Brazil.

METHODS

Cross-sectional study with a quantitative approach, conducted in the city of João Pessoa, capital of Paraíba state, located in the Northeast region of Brazil, in 2014.

The basis for the study was the police investigations of 424 victims of homicide, interpersonal offense by any means and with lethal outcome, carried out by the Civil Police in that city in the year in question Such documents are concentrated on the Crime Station against the Person, which are formal investigative tools and represent the set of steps Police Investigators and Criminal Experts, organized by the Police Registrar, and chaired by the Police Delegate, with the aim of ascertaining the criminal fact and discovering its authorship[13].

Considering the above and after the presentation of the research project and the appropriate institutional authorization for its continuation, through the competent authority, the researchers involved inserted themselves in the study scenario and forwarded data collection. A form-based instrument of its own was used, based mainly on the data in the documents that make up police inquiries every time they went to homicide victims, and therefore could be captured, to know: the Occurrence Report, the Family Declaration Term, the Cadaverous Report and the Crime Venue Report.

From the mentioned documents, questions were elaborated that contemplated general sociodemographic variables: gender, age, race/color, educational level and marital status; homicide-related variables: day of the week, shift, place of crime, place of death, means used, number of injuries and affected body region; in addition to variables on illicit drug use and incarceration history.

Data were tabulated and processed in a single database, prepared with the help of the *Software Statistical Package for the Social Sciences* (SPSS), version 20.0, from which we proceeded the statistical analysis, from the descriptive point of view, being measured absolute and relative frequency, and analytical, from univariate and multiple models considering statistical significance when $p < 0.05$ and confidence level of 95%.

In the univariate analysis, the chi-square test investigated the factors associated with involvement with illicit drugs, dependent variable, considering as independent variables gender: female and male; the age: <20 years, 20 to 24 years, 25 to 29 years and ≥30 years; the schooling: <7 years of study and ≥7 years of study; the color: white and not white; and incarceration history: yes and no; calculating the p-value.

For the multiple analysis, performed through the Robust Poisson Regression, a model was developed to investigate factors

associated with involvement with illicit drug, dependent variable, with adjustment for independent variables such as gender: female and male; the age: <20 years, 20 to 24 years, 25 to 29 years and ≥30 years, the schooling: < 7 years of study and ≥ 7 years of study; the color: white and not white; and the incarceration history: yes and no; calculating the Adjusted Prevalence Ratio (aPR) and Confidence Intervals (CI).

For ethical and legal reasons, the research was conducted in compliance with the principles and guidelines Resolution Nº 466 of 2012 of the Conselho Nacional de Saúde, being registered in Plataforma Brasil and approved by the Research Ethics Committee of Universidade Estadual da Paraíba, under the Certificate of Submission for Ethical Appreciation (CAEA) of Nº 53324316.7.00005187.

RESULTS

With a total of 424 homicide victims accounted for in João Pessoa, Paraíba state, scenario of this study, in 2014, a monthly average of 35.31.1 per day and a rate of 52.8 per 100 thousand inhabitants, there was a predominance of men (93.2%), non-whites (97.2%), aged up to 30 years, considering the age groups under 20 years (22.6%), of 19 to 24 (26.7%) and 25 to 29 (16.8%), with less than seven years of schooling (67.5%), a history of drug involvement (72.5%), and more than a third with a history of seclusion (40.3%) (Table 1).

Regarding the characteristics of the injuries, homicides, it was found that the majority occurred during working days (67%), at night (56.4%) and on public roads (75%), by means of fire (86.8%), multiple injuries (84.2%), and death still reported at the crime scene (82.5%) (Table 2).

Continuing with the characteristics of homicides, injuries to the head (60.8%) and thorax (55.4%) regions were highlighted (Table 3).

As a significant part of the victims had a history of involvement with illicit drugs, univariate analysis was performed considering it as the dependent variable, and sociodemographic aspects as independent, revealing statistical significance with the sex (p=0.037), the age (p=0.002), and the incarceration history (p<0.001) (Table 4).

Prevalence of illicit drug involvement was higher 16% in males (PR: 1.16; CI 95%: 0.79-1.73), 19% in not whites (PR: 1.19; IC 95%: 0.76- 1.86) and 67% in those with a history of incarceration (PR: 1.67; IC 95%: 1.44-1.94), being this with statistical significance (p<0,001). Furthermore, it was found that the prevalence of illicit drug involvement was 2% lower among those with more than seven years of study (PR: 0.98; CI95%: 0.84-1.15) and less prevalent the higher the age range, being 28% less prevalent among those 30 and older (PR: 0.72; CI 95%: 0.58-0.88), statistically significant finding (p=0.002) (Table 5).

Table 1: Distribution of intentional homicide victims according to sociodemographic variables. João Pessoa (PB), 2015.

Variables		N	%
Sex	Female	29	6.8
	Male	395	93.2
Age range	<20	96	22.6
	20 – 24	113	26.7
	25 – 29	71	16.8
	≥30	144	33.9
Marital Status	Without mate	299	70.5
	With mate	125	29.5
Breed/Color	Not white	412	97.2
	White	12	2.8
Schooling	<7 years of study	286	67.5
	≥7 years of study	138	32.5
Involvement with illicit drugs*	Yes	242	72.5
	No	92	27.5
Incarceration history**	No	182	59.7
	Yes	123	40.3

*n=334; **n= 305.

Table 2: Distribution of intentional homicide victims according to the characteristics of the offense. João Pessoa (PB), 2015.

Variables		N	%
Number of victims	One	386	91.0
	Two	38	9.0
Days of the week	Working days	284	67.0
	Weekend	140	33.0
Shift	Daytima	185	43.6
	Night	239	56.4
Crime Location	Public highway	318	75.0
	Residence	64	15.1
	Others	42	9.9
Used medium	Firearm	361	86.8
	White gun	42	9.9
	Others*	14	3.3
Number of injury	Multiple	357	84.2
	Only	67	15.8
Place of death	At the crime scene	350	82.5
	In transport	12	2.9
	At the hospital	62	14.6

*intoxication, asphyxiation, explosion, etc.

Table 3: Distribution of victims of intentional homicide by affected body region and gender. João Pessoa (PB), 2015.

Body region	Sex				Total	
	Female		Male			
	N	%	N	%	N	%
Head	14	48.3	244	61.8	258	60.8
Face	6	20.7	75	19.0	81	19.1
Neck	6	20.7	58	14.7	64	15.1
Chest	13	44.8	222	56.2	235	55.4
Abdomen	4	13.8	95	24.1	99	23.3
Back	5	17.2	85	21.5	90	21.2
Genitals	1	3.4	7	1.8	8	1.9
Buttocks	0	0.0	15	3.8	15	3.5
UP*	8	27.6	133	33.7	141	33.3
LM**	3	10.3	63	15.9	66	15.6

*Upper limps **Lower members.

DISCUSSION

The epidemiological context of Brazil is marked by a triple burden of diseases and health problems[14], which includes infectious and parasitic diseases, and especially noncommunicable diseases and external diseases and violence; This is due to the magnitude it has assumed, especially with the murder, about four times higher than the world average[2].

As it turned out, there was a monthly average of 35.3 homicides, 52.8 individuals killed per 100 thousand inhabitants, significant numbers when considering the latest official surveys reported in Brazil, which account for a rate of 25.8, and particularly in the state where João Pessoa, the scenario of this study, is located in Paraíba with 39.3. In this way, it can be seen the highlight of that city in the state, but also nationally, which not by chance made it occupy the fourth place, among all other capitals[4,5].

Although it has long been known that homicides, such as those mentioned above, are generally the result of a combination of a variety of factors, both individual and external to victims and perpetrators[7,15,16], it is nevertheless necessary to reiterate that they are not evenly distributed throughout the population, and while it is found that femicide, or the death of women due to gender or domestic violence, has been increasingly evident[6], they are concentrated in young, non-white, low-educated men, as has long been shown in other findings[17-23], with which those presented herein have consistency.

Thus, it is urgent to highlight the notorious concentration of homicide victims in a population of particular demographic and socioeconomic characteristics, originating mainly from the Brazilian Northeast region, in which those have been reported in increasing proportions. It is believed that the population growth of its urban centers, especially the capital cities, on the one hand, has not been followed by an adequate structuring for part of its inhabitants, which are in rare marginalized realities[4,24], and on the other, it has attracted some criminal factions from different parts of the country and the local development of others, both realities that can cooperate to increase violence.

Although recognizing the broad reality in which homicide fits in, in the broader context of the characteristics of its occurrence,

Table 4: Distribution of intentional homicide victims according to sociodemographic variables and involvement with illicit drugs. João Pessoa (PB), 2015.

Independent Variables		Victim involvement with illicit drugs*				P value**
		Yes		No		
		n	%	n	%	
Sex	Woman	229	73.9	81	26.1	**0.037**
	Men	13	54.2	11	45.8	
Age	<20	57	77.1	17	22.9	**0.002**
	20 – 24	73	81.1	17	18.9	
	20 – 29	44	78.6	12	21.4	
	≥30	68	59.7	46	40.1	
Breed/Color	White	8	66.7	4	33.3	0.648
	Not white	234	72.7	88	27.5	
Schooling	< 7 years of study	166	74.1	58	69.1	0.335
	≥ 7 years of study	76	25.9	34	30.9	
Incarceration history	Yes	108	90.0	12	10.0	**<0.001****
	No	92	54.1	78	45.9	

* n =334; **Chi-square

Table 5: Distribution of intentional homicide victims according to sociodemographic variables and involvement with illicit drugs. João Pessoa (PB), 2015.

Independent Variables		Illicit drug use		
		Ajusted PR*	CI95%	P
Sex	Woman	1		
	Men	1.16	0.79-1.73	0.435
Age	<20	1		
	20-24	0.99	0.82-1.18	0.880
	20-29	0.90	0.74-1.11	0.339
	≥30	0.72	0.58-0.88	**0.002**
Breed/Color	White	1		
	Not white	1.19	0.76- 1.86	0.443
Schooling	<7 years of study	1		
	≥7 years of study	0.98	0.84-1.15	0.827
Incarceration history	No	1		
	Yes	1.67	1.44-1.94	**<0.001**

*Robust Poisson Regression

including a number of issues that, individually, could be widely studied and discussed, such as those already posed here - sex, age, education and color - which need to be analyzed not by themselves, but because they point to broad social issues such as inequality, especially the latter two. While widely known and debated, such an impression continues to demand important reflections, especially due to the degree of naturalization reached[4].

About the above, from the analysis of homicides in almost a decade, between 2000 and 2009, it appears that aspects related to schooling, as well as color, may be competing factors for greater victimization by these diseases[18], which was also discussed from other analyzes[25]. However, according to the authors' conclusion, even if we consider the most and least educated, those injuries were more prevalent among non-white individuals when compared to whites, and therefore suggests that the second aspect explains an important part of it is occurrence[25].

Still considering the more general context of characteristics of the occurrence of homicides, in addition to those previously mentioned, it is important to note that the victims mostly died at the crime scene, which can be explained, in part, if it is considered that the majority suffered multiple injuries, which positions are located, such as the chest and the head, as you have already found[26]; the firearm being the main instrument involved, an aspect observed in previous analyzes[26-28].

At the outset, in the context in question, it can be assumed that notwithstanding homicides are in fact an important public health problem in the global health reality, and particularly in Brazil, currently it would be worth saying that these are diseases that in addition to affecting individuals with peculiar characteristics, as explained above, occur in a unique way, because it involves a high degree of violence, either by the instrument used by the aggressor, the firearm, or by the characteristics of the death of individuals, generally in the scenario in which they were victimized, with little chance of being rescued.

In a context of homicide firearm centrality Disarmament Statute, that despite dating back more than a decade, it may not have achieved the expected social impact on all population groups. Thus, even though there is a turning point in the incidence of deaths, without clipping by category, as well as considering only those that occurred by firearms during their first year of implementation in 2005, the presumed stabilization in the following years only occurred in the first group and not in the second[5].

Excluding firearm-related homicides consistently increased[5], although in a context of more restrictive legislation, with the Disarmament Statute, expanding social policies, income distribution, housing, access to education and health, especially in the first decade of the 2000s, and, also, increasing the proportion of elderly people, less exposed to external injuries, such as accidents and violence, and reducing young people and adults from 15 to 29 years old, who are more vulnerable instead[29]. According to

demographic data, between 2005, year of statute, and 2015, the proportion of the former increased by about 25%, and that of the latter, by contrast, decreased by 10% over the period[29].

Thus, access to firearms remains widespread, especially among criminal factions, and, it can be assumed, has victimized violence by adolescents and young adults, especially in poor neighborhoods of large cities[16,30], like the capitals. This can be attributed, on the one hand, to the presumed low effectiveness of Disarmament Statute, especially due to the lack of supportive intersectoral actions; as well as the fact that the expansion of social policies, spread in the first decade of the 2000s, although important, it is believed that they were not enough to have a more concrete impact on homicide indicators.

In addition to the firearm, involvement with illicit drugs such as marijuana, crack and cocaine is a clear issue among homicide victims, as it appears that a significant amount used one or some of these substances[10,31]. Such observations are not limited only in the investigated scenario of the Northeast, but also outside it, as in the Southeast[21,29], and even more internationally, since the aspects that circumscribe the use of these substances, especially trafficking, are correlated with greater risk for the type of injury in question[27,32].

Hence, the context that circumscribes illicit drug use and trafficking is currently recognized as one of the main risk factors for death by homicide[33,34], and, considering the associated characteristics, as also shown in this study – age, sex, and incarceration history- these are aspects that need to be considered, especially in the current scenario, in which there is an international movement of individuals who, through diverse organizations, strongly intend to debate the legalization and decriminalization of the use of these substances in order to qualify the positions.

As observed, when considering the adjustment of variables in a regression model, age and history of seclusion remained statistically associated with involvement with illicit drugs, noting that the prevalence of this condition was higher among those already incarcerated and lower as the older age group, especially for those over 30 years old. It is assumed that the association between the use of these substances and the violent behavior of users can be explained, on the one hand, by the need to focus on crimes through which they obtain resources necessary for their acquisition, and on the other, and perhaps mainly by their closer relationship with drug trafficking, whose agents have been recruiting ever younger individuals[30,32,35,36], both realities that often result in death or imprisonment.

In a scenario of exacerbated prohibitionism and therefore lack of regulation for drugs other than tobacco and alcohol, and deep social inequality, makes these substances important driving forces for crime, which has one of its most profitable segments in trafficking, and which ultimately recruits and victimizes, in particular, homicide, exactly those who are the greatest victims of the

inequities now posed: blacks, young adults, residents of the suburbs, low-educated, low-income individuals.

In this context, it is not by chance that in scenarios of overcoming inequities, with the improvement of social conditions of the population, increase of income *per capita*, lower unemployment rates, lower income inequalities, increased coverage and school attendance rates, as well as the effectiveness of prevention and public safety policies, homicide rates are lower[37].

Nevertheless, in the Brazilian reality, one of the 10 most unequal in the world, which occupies the 79th position in the *ranking* of HDI, in not rare contexts, the exact opposite is seen, with the expansion of poverty and extreme poverty, in which 54 million and 15 million individuals are inserted. 26.5% and 7.4% population, respectively; even worse when considering only the Northeast[38,39]. Among the youngest, children and adolescents, inequalities impact the lives of six out of 10 individuals, 61% live with fundamental rights deprivations such as education, sanitation, information, housing, clean water and protection against child labor[40].

Moreover, it would be worth highlighting, in addition to the retro-mentioned points, also the expansion of actions to prevent homicide, based on a culture of peace that reaches all social groups, with a greater discussion about possession and possession of firearms and the illicit drug use, allied to effective public policies against impunity, especially in trafficking, as pointed out in an important study on the issue of[30]. These initiatives can be potentially beneficial in reducing the number of homicides and the deleterious effects on society, but will only be effective if considered as part of a complex intersectoral strategy.

Regarding the limitations of this study, it is considered that research on homicides is always complex, especially in cross-sectional studies, since multiple factors, including outcome and exposures, are evaluated concomitantly, which does not allow establishing causal relationships. Besides, involvement with illicit drugs, also addressed, is a multidetermined outcome, so control of all factors that influence it in an analysis is unlikely. This study, therefore, it does not deal with factors that cause homicide or the use of illicit drugs, but intends to diagnose, in the studied scenario, the more general context in which they occur. Finally, the difference between some of the data presented here and those provided by the Sistema de Mortality Information System may diverge slightly because after sending the same data to the Ministry of Health, it is not rare that imply some changes due to corrections made, including redistribution of deaths by place of residence.

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