

# Profile of Intoxications by Drugs of Abuse in Brazil

Perfil de Intoxicação por Drogas de Abuso no Brasil

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## ABSTRACT

In the last decade, there has been an increase in the consumption of drugs of abuse (DA) globally, considered a serious public health problem and, due to this abuse, there has been an increase in the occurrences of intoxications by these substances. Thus, the objective was to build an epidemiological profile of Brazilian intoxications due to DA. Therefore, a compilation of data about poisoning by DA in the National System of Toxic-Pharmacological Information (SINITOX) occurring between 1999 and 2017 was performed, evaluating variables of age group, circumstance, occurrence zones, gender, evolution and deaths. Additionally, a data survey was carried out in the DATASUS - SINAN (Information System for Notifiable Diseases) database, looking for the same parameters, in order to carry out a comparison between the databases. According to the data obtained, it was found that the profile of intoxication by DA is composed mainly of young men aged 20-29 years, coming from urban areas who become intoxicated, mainly by abuse as the main circumstance of intoxication. Intoxications evolve, mainly to cure without sequelae, with less recurrent deaths. Such results are compatible with other studies on DA poisoning. It is a relevant study to know the Brazilian profile on this type of intoxication, considering that it makes it possible to identify potential risk conditions to which individuals are exposed, and thus prioritize strategies to propose preventive measures in these cases of intoxication. However, caution is needed when analyzing the information from the two databases analyzed (SINITOX and DATASUS), as both have gaps.

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Palavras-chave: Toxic Substances; Drug Abuse; Intoxication.

## RESUMO

Na última década, houve um aumento no consumo de drogas de abuso (DA) globalmente, considerado um sério problema de saúde pública e, em virtude desse uso abusivo, houve incremento das ocorrências de intoxicações por essas substâncias. Assim, objetivou-se construir um perfil epidemiológico das intoxicações brasileiras por DA. Foi realizado, então, uma compilação de dados acerca das intoxicações por DA no Sistema Nacional de Informações

Tóxico-Farmacológicas (SINITOX) ocorridas entre 1999 a 2017, avaliando variáveis de faixa etária, circunstância, zonas de ocorrência, sexo, trimestre, evolução e óbitos. Adicionalmente, realizou-se um levantamento de dados na base DATASUS – SINAN (Sistema de Informação de Agravos de Notificação) buscando-se os mesmos parâmetros, a fim de realizar uma comparação entre as bases. De acordo com os dados obtidos, verificou-se que o perfil do intoxicado por DA é composto majoritariamente por homens jovens, de 20-29 anos, advindos de áreas urbanas que se intoxicam, principalmente, por abuso como principal circunstância, tendo o primeiro trimestre o maior número de intoxicações. As intoxicações evoluem, principalmente, para cura sem sequelas, com óbitos menos recorrentes. Tais resultados são compatíveis com outros estudos sobre intoxicações por DA. É um estudo relevante para conhecer o perfil brasileiro sobre esse tipo de intoxicação, tendo em vista que possibilita identificar potenciais condições de risco a que os indivíduos estão expostos e, dessa forma, priorizar estratégias para propor medidas preventivas desses casos de intoxicação. Entretanto, é necessário cautela na análise das informações das duas bases de dados analisadas (SINITOX e DATASUS), pois ambas apresentam lacunas.

Keywords: Substâncias tóxicas; Drogas de abuso; Intoxicação.

## **INTRODUCTION**

Drugs of abuse (DA) refers to the use of any licit substance (especially alcohol) or illicit associated with addiction which corresponds to a pattern of substance use that leads to suffering or clinical suffering of any kind, possibly associated with tolerance, withdrawal or other symptoms (APA, 2000; DEA, 2017; GOFORTH et al., 2010; SWIFT, LEWIS, 2009; WHO, 2018).

Alcohol and tobacco are substances with wide availability and greater social acceptability, due to their lawful nature, however they are considered as initial drugs and one of their negative effects is to increase the risk of using illicit drugs. DA use has been a socially established practice for thousands of years. However, since the 20th century, the unrestrained use of these substances has become a worldwide public health problem (BASTOS et al.; GOFORTH et al., 2010; PRATTA, SANTOS, 2006; RAUP, ADORNO, 2011; WHITEFORD et al., 2013).

In the last decade there has been continued growth in the use and availability of psychoactive substances worldwide (ZAWILSKA, ANDRZEJCZAK,

2015). It is estimated that about 5 % of the world's adult population used an illicit drug at least once in 2015 (UNODC, 2017). In addition, the drug abuse market is expanding. New DA have been created in recent years, being more potent and with greater side effects, causing the number of intoxications by DA to increase, as well as their associated fatal events (PICHINI et al., 2018; POURMAND et al., 2018; ZAAMI et al., 2018).

As a result of this scenario, the uncontrolled use of drugs by the population has become one of the costliest social phenomena for the health and justice system. The consumption of DA significantly affects all age groups and social environments and currently occurs in an individualized and abusive way, due to the enormous quantity of substances available in the market and ease of acquisition, elements that contribute to the dissemination and initiation of consumption (BUSH, AUTRY, 2002; MACHADO, MIRANDA, 2017). In addition, their consumption has also been associated with a greater involvement in violent deaths (LEMOS et al., 2019). There are a number of challenges in implementing a drug control system, in the violence generated by illicit drug trafficking, in the rapid evolutionary nature of new psychoactive substances, and in situations that result in human rights violations (UNODC, 2017). There are also disagreements regarding the model of care for people who use drugs to be adopted by the Unified Health System (Sistema Único de Saúde, SUS), which often has a care model only centered on abstinence and without much focus on guiding harm reduction, which could lead to fewer cases of poisoning (MACHADO et al., 2020).

In Brazil, one source of data on the various types of intoxication occurring in the national territory is through the National System of Toxic-Pharmacological Information (Sistema Nacional de Informações Tóxico-Farmacológicas, SINITOX). SINITOX has as its main function the coordination, collection, and compilation of intoxication data (for medicines, drugs or pesticides, for example) and intoxications reported in the country (SINITOX, 2020a).

Toxicological records are currently being carried out by the Information and Toxicological Assistance Centers (Centros de Informação e Assistência Toxicológica, CIATs), located in all regions of the country. Some of these centers are also part of the so-called National Network of Information Centers and Toxicological Assistance (Rede Nacional de Centros de Informação e Assistência Toxicológica, RENACIAT). Notifications are sent from CIATs or RENACIAT to SINITOX, which is responsible for the consolidation and annual dissemination of data, at the national level (SINITOX, 2020a; 2020b).

However, the inconsistency in the sending of information by CIATS can cause gaps in the

evaluated data. Thus, it was necessary that a second database be evaluated in comparison so that the epidemiological profile was established. The Information System for Notifiable Diseases - Information Technology Department of the Public Health Care System - SUS (SINAN-DATASUS) database was chosen, which also gathers information on poisoning by DA (BRASIL, 2021).

SINAN gathers information on notifications, investigations and monitoring of diseases, injuries and public health events in public and private health services throughout the national territory. The system is mainly fed by data on diseases and conditions, which appear on the National List of Compulsory Notification Diseases, which doctors, other health professionals responsible for public and private health services, and patient care providers inform. States and municipalities can include other major health problems in their region (BRASIL, 2009a; 2017).

The main objective of the creation of SINAN was to try to remedy the difficulties of the Compulsory Disease Notification System (Sistema de Notificação Compulsória de Doenças, SNCD), created from the institution of the National Epidemiological Surveillance System, by decree No. 78.231, 12/08/1976 and by Law No. 6,259, 30/10/1975, which established rules on compulsory disease reporting (BRASIL, 1976; 2009a).

The SINAN data contribute to the investigation process and support the analysis of this information with the realization of a dynamic diagnosis in the occurrence of an event in the population, providing information on the epidemiological reality to assess the risk to which people are subject, helping decision-making by health authorities and health planning (BRASIL, 2018). Therefore, а study that demonstrates epidemiological data on existing drug abuse, in the current context of the rampant occurrence of substance abuse, is essential to enable knowledge of such a profile and allow the creation of public health policies that aim to monitor and to preserve individuals who are in a vulnerable situation. Thus, the objective of this work is to build the epidemiological profile of DA poisonings that occurred in the national territory, through the correlation between the SINITOX and DATASUS - SINAN databases.

## **METHODS**

For the analysis of the epidemiological profile of intoxication by DA, data from all the years available in SINITOX were used, available on the website https://sinitox.icict.fiocruz.br/dados-nacionais. The participation in sending information from each CIAT to SINITOX was also analyzed by year of notification. In SINITOX, there is a separation of the categories of DA and medications, these substances belonging to the medication class are included in the item "toxic agent: medication", therefore, in this study, only data referring to DA were considered, so that medications such as benzodiazepines and barbiturates did not fall into this category of drugs of abuse. Thus, considering the data referring to DA, nineteen years were analyzed, comprising the years from 1999 to 2017 evaluating variables of age group, circumstance, occurrence zones, gender, evolution and deaths.

In order to compare, the data collection was also carried out on the basis of DATASUS – SINAN, available on the website http://www2.datasus. gov.br/DATASUS/, on DA intoxication. The same topics found in SINITOX were collected, so that the data from the two databases could be compared. Additionally, data were collected on race, education, national distribution of intoxications by region and

diagnostic confirmation criteria in DATASUS-SINAN. As the data are available in SINAN up to May 2020, these most current data were also analyzed. The collection of information in the databases was carried out from June 11, 2020 to January 4, 2021.

## RESULTS

Initially, participation of each of the CIATs in the SINITOX statistics from 1999 to 2017 was verified. Data were not always sent continuously by all centers, and there may be divergence of the real values (Table 1).

After collecting data from the tables provided by SINITOX, they were then compiled, evaluated and systematized. When observing the age group in which the intoxications occur, it is noticed that young people from 20 to 29 years are the main victims of drug intoxication (32.16 %). The ranges of 30 to 39 and 40 to 49 also present high intoxication rates of 22.64 % and 14.19 %, respectively. Adolescents aged 15 to 19 years, although representing a lower percentage than the main intoxicated groups, presented a significant result (13.54 %). Poisoning rates decline at other ages, being 6.18 % from 50 to 59 years old and 3.22 % from 10 to 14 years old. In the age groups of the elderly, we found 1.94 % from 60 to 69 years old, 0.43 % from 70 to 79 years old and 0.19 % in the group above 80 years old. In children, we observed rates of 0.47 % for children under 1 year old, 1.40 % for 1 to 4 years old and 0.53 % for 5 to 9 years old. The ignored data on age represented 3.10 %.

Evaluating the gender of intoxicated individuals, it was estimated that among the 75028 DA intoxications recorded from 1999 to 2017, 74.40 % of the victims were male, while women account for only 24.81 % of intoxications, and ignored gender data represented 0.79 %.

When analyzing the data of intoxication by circumstance, it is observed that abuse is the main circumstance of intoxication (83.87 %), followed by self-extermination (4.55 %) and individual accident (3.71 %). Other circumstances were less relevant in relation to the number of cases but include circumstances leading to intoxications such as: abstinence (2.98 %), violence/homicide (0.54 %), misuse (0.28 %), food intake (0.25 %), occupational factors (0.14 %), attempted abortion (0.12 %), collective accident (0.06 %), self-medication (0.05 %), administration error (0.02 %), therapeutic use (0.02 %), and environmental accident (0.01 %). Inadequate medical prescription, a possible cause of intoxication, was not associated with any case of DA intoxication. The data on the circumstances classified as ignored, represented 2.28 % and others represent 1.11 %.

Regarding evolution, 67.47 % of the cases evolved to cure, followed by unconfirmed cure (5.57 %) and sequelae (1.19 %). The death cases represented 1 % of the total amount registered. Other categorizations of evolution were: death (other circumstance) 0.09 %, others 7.77 % and ignored 16.99 %. Of the 682 deaths due to drug intoxication reported by SINITOX, males represent 78.30 %, females 12.61 % and 9.09 % ignored. The age group with the highest number of deaths was 30 to 39 years (24.82 %), with 20 to 29 years 19.74 %, and 40 to 49 19.01 % representing the total deaths related do DA intoxication. There were in the period, records of only one death in each category: children under 1 year old, 5 to 9 years old, and over 80 years old. Other age groups reported were: 1 to 4 years (0.87 %), 10 to 14 years (0.58 %), 15 to 19 years (4.64 %), 50 to 59 years (13.06 %), 60 to 69 years (4.93 %), 70 to 79 years (1.74 %), and ignored representing 10.16 %.

Of the various circumstances of death from poisoning by DA, the main was abuse (74.31 %), followed by attempted suicide (8.27 %). Others that had less relevant results were: abstinence (1.89 %), individual accident (1.60 %), food intake (0.29 %), violence / homicide (0.29 %), misuse (0.29 %) and collective accident (0.15 %). However, it was also observed that the following circumstances did not correlate with any deaths: occupational factors, attempted abortion, self-medication, administration error, therapeutic use, environmental accident, and inadequate medical prescription. Those that were classified as ignored represented 11.32 % and other 1.60 %.

Finally, the distribution of intoxications according to their area of occurrence and the period of the year in which they occur most was also evaluated. There is a significant predominance of intoxications in the urban area (83.29 %), in relation to the rural area (7.84 %), and 8.87 % represents the ignored data.

The authors of the present work carried out an additional search in the DATASUS - SINAN database, which also summarizes the data on intoxications that occurred in the national territory up to the period of May 2020. All evaluated criteria such as gender, status of occurrence, area and evolution, obtained the same results in the two databases, except age, due to the age criterion used by DATASUS - SINAN being different from that described in SINITOX. According to DATASUS - SINAN, there was a predominance of the male population in the intoxicated profile (74.44 %), while women represent 25.54 % and ignored 0.01 %. The most affected age group was 20 to 39 years old (56.93 %), followed by 40 to 59 years old (21.44 %), 15 to 19 years old 14.09 %, and 10 to 14 years old 2.65 %. At higher ages, we found 1.65 % from 60 to 64 years old, 0.95 % from 65 to 69 years old, 0.68 % from 70 to 79 years old and 0.17 % over 80 years old. At ages from 05 to 09 years old 0.18 %, 0.38 % from 01 to 04 years old, and 0.87 % below 1 year old were found.

Regarding the intoxication circumstance, DATASUS - SINAN found that abuse was the main trigger (75.06 %), followed by habitual use (11.97 %) and attempted suicide (2.81 %). Other less relevant circumstances were: food intake (2.08 %), accidental (0.92 %), homicide / violence (0.14 %), environmental (0.11 %), self-medication (0.1 %), administration error (0.08 %), attempted abortion (0.07 %), therapeutic use (0.06 %), and medical prescription (0.03 %). Ignored represented 5.7 % and other 0.87 %.

Regarding the evolution of these intoxications, the majority evolved with a cure without sequelae (70.46 %), followed by a cure with sequelae (5.09 %) and death (1.51 %). Deaths from other causes account for 0.5 %, loss of follow-up 4.92 % and ignored 17.52 %.

Observing the area of occurrence of intoxications, it was possible to see a higher occurrence of those in urban areas (91.59 %), followed by rural areas (3.37 %) and peri-urban areas (0.54 %); ignored represents 4.51 %. It was also possible to observe from the DATASUS - SINAN data that there was a predominance of mixed race (33.86 %), followed by white race (28.89 %), black race (5.51 %), oriental race (0.48 %) and finally, indigenous race (0.14 %), the ignored race was 31.12 %.

In addition it was possible to analyze the profile of the intoxicated according to schooling. There was a predominance of intoxication among individuals with schooling from the 5th to the 8th grade (9.14 %), followed by those with complete high school (8.60 %) and incomplete high school (6.87 %). Complete elementary education represents 5.16 %, incomplete 1st to 4th grade of fundamental education 3.19 %, complete 4th grade 1.82 %, incomplete higher education 1.05 %, complete higher education 0.98 %, illiterate 0.76 % and categorized as not applicable were 1.31 %. However, the educational variable was not collected for most individuals (61.12 %), and was not provided or ignored.

When analyzing the national distribution of intoxications by region, the highest concentration of these events occurred in the Southeast (62.18 %), followed by the Northeast (15.46 %) and South (13.34 %). A total of 6.45 % came from the Midwest and 2.57 % from the North. Observing the capitals, those most affected by the intoxications were São Paulo (56.61 %), Curitiba (6.79 %) and Rio de Janeiro (6.26 %). Other relevant capitals were Belo Horizonte (4.27 %), Manaus (4.18 %), Natal (3.61 %), Brasília (2.67 %), Fortaleza (2.35 %), João Pessoa (2.29 %) and Recife (2.07 %). The other capitals had results below 2 %.

Finally, in relation to the confirmation of intoxications, it was observed that for the most part, only clinical (54.10 %) or clinical-epidemiological criteria (36.84 %) were used to confirm the diagnosis of intoxications. In turn, clinical-laboratory confirmation was less used (3.11 %) and 5.95 % were ignored.

Regarding the data found in the two databases analyzed, although the intoxicated population is virtually the same, important differences were observed in the number of notifications and years notified. A notable difference was also observed between the number of intoxications and deaths recorded by both systems. In both databases, the intoxication reports are complete for 2017, while the years 2018 to 2020 are not available in the SINITOX database. Regarding deaths, there are no data available for the years 1999 to 2004 and for the year 2006 in DATASUS - SINAN and the years 2018 to 2020 are not available on SINITOX. These differences between number of intoxications and deaths reported in SINITOX and DATASUS - SINAN can be seen in Table 2.

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# Table 1: Participation of CIATs in sending data on intoxications for drugs of abuse, from 1999 to 2017.

CIATs: Information and Assistance Toxicological Centers. SINITOX: National System of Toxic-Pharmacological Information (Sistema Nacional de Informações Tóxico-Farmacológicas). Source: Data extracted from SINITOX.

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	Intoxication		Death	
Year	SINITOX	DATASUS	SINITOX	DATASUS
666 L	2654	Ŋ	21	*
5000	1180	16	7	*
100Z	1492	6	13	*
2002	2127	7	11	*
5003	2676	00	34	*
2004	2931	~	34	*
5005	3587	12	58	7
9002	4477	14	42	*
2002	3872	1020	65	15
5008	3870	1872	61	41
6002	6944	3051	61	37
0102	7015	3881	51	46
1102	6787	6421	51	79
2102	7998	9237	39	108
2013	4334	12133	27	144
2014	3352	13617	16	216
5102	3659	12348	27	324
9102	3330	13130	55	325
2102	2743	17869	16	207
8102	*	21221	*	136
6102	*	21769	*	108
5020	*	4980	*	34

\*No data available. **SINITOX:** National System of Toxic-Pharmacological Information. **DATASUS – SINAN**: Information Technology Department of the Public Health Care System - SUS (DATASUS) - Notifiable Diseases Information System. Source: Data extracted from SINITOX (available until the year 2017, updated on 25/05/2020) and DATASUS (updated on 13/05/2020, subject to review).

There is an important difference in the data analyzed and processed by both databases. While SINITOX evaluates only evolution, gender, zone, distribution per semester, age group and circumstance, DATASUS -SINAN also assesses social aspects such as schooling, clinical aspects of intoxications and their validation, as well as an analysis of all capital intoxications, states, and regions of the country. Such data are absent in SINITOX.

## DISCUSSION

According to the analyzes carried out from the SINITOX and DATASUS - SINAN databases, we determined a profile common to the variables that were possible to be observed. Young men, aged 20-39, coming from urban areas who are predominantly intoxicated by abuse compose such profile.

A parallel analysis can be made with the profile of DA users of the research developed by Almeida and collaborators (2014). It evaluted in a CAPSAD modality III (24 h) in the city of João Pessoa in Paraíba with data from 706 users, and observed the majority of male users (86.69 %), mixed race (66.15 %), with low education and are, respectively, between 21 and 30 (31.02 %), 31 to 40 (27.05 %) and 41 to 50 years old (20.96 %). These results resemble those found in the present study.

It can also be observed that the intoxications caused by DA, found by Oliveira and collaborators (2005) in the Municipal Emergency Room of Juiz de Fora (Minas Gerais state), were predominant among young male adults, aged 20 to 30 years, caused mainly by misuse. This situation was also repeated in records of an information and toxicological assistance center in the municipality of Maringá; in the 77 records of intoxication by illicit drugs registered in the notification and care forms, the main profile was of male adults aged between 20 and 29 years (RABELO et al., 2007).

According to the Brazilian Report on Drugs (2009), women have a greater perception of serious risk of drug use, which can lead to less frequent and intense consumption, generating fewer cases of intoxication in relation to men (BRASIL, 2009b). An analysis carried out by Bochner and Freire (2020) from 2010 to 2015 showed that in this period, as a result of intoxication by drugs of abuse, the risk of dying was five times higher among men than among women in Brazil.

The fact that the gender with the highest number of intoxications is male can also be explained by social factors: culturally, male and female roles have stereotypes that determine behavior limits that favor male drug use; consequently this gender ends up presenting a higher number of intoxicated individuals (ALVES, KOSSOBUDZKY, 2002).

Reis and collaborators (2013) reported that all male hospitalizations with a diagnosis of intoxication, registered in a center of information and toxicological assistance in Paraná, were due to DA abuse. Although few studies have been carried out with the aim of evaluating the profile of DA poisoning, the authors of the studies previously described also found results similar to those of the present study.

The large number of DA poisonings in the younger population may be related to the concomitant and abusive use of alcohol and energy drinks based on caffeine, taurine and carbohydrates. In addition, the use of multiple substances is more frequent in this population (BASTOS et al., 2017; BOCHNER, FREIRE, 2020). Addiction caused by DA leads to tolerance, which is defined as decreasing the effect of a drug with continued use, so that there is increased need for drug use. As a result, users tend to increase the doses used, leading to abuse, increasing the risk of overdose and consequently causing intoxication (SWIFT, LEWIS, 2009).

The index of other circumstances, such as selfextermination, is relatively low (4.55 %), because DA are not considered the first-choice substances for these purposes, with medicines and pesticides being the main choices (MACHADO, SANTOS, 2015; SANTOS et al., 2013).

Oliveira and collaborators (2005) observed that DA poisoning tends to have a very low mortality rate, having no cases recorded in his study and being only 1 % in the present study. Regarding cure rates, it was estimated that 67.47 % of the intoxicated patients evolved to cure.

Regarding education, we obtained results similar to Santana and collaborators (2020), where there was a prevalence of intoxicants who had up to the 8th grade (43.5 %) in admissions to an adult intensive care unit of a teaching hospital, located in the northwest region from the State of Paraná, from January 2011 to December 2015, notified to the Poison Control Center and with medical diagnoses or complications related to the consumption of DA. It was also possible to observe the prevalence of males (89.13 %) and age profile of the majority of young adults of economically active age.

However, this information on schooling should be viewed with caution, as in both cases the information on schooling neglected or not informed was expressive. According to the III National Survey on Drug Use by the Brazilian Population (2017), the level of education varies greatly in relation to the type of drug being used. The most recurrent use of legal drugs such as alcohol and tobacco is by the population with less years of study, and the use of illicit drugs by those who have completed high school or incomplete higher education (BASTOS et al., 2017; SANTANA et al., 2020).

With the III National Survey on Drug Use by the Brazilian Population (2017), we can also make a comparison in relation to the regions of higher consumption and intoxications. According to the study, there is a higher prevalence of consumption in metropolitan regions, capitals and large municipalities in relation to non-metropolitan, non-capitals and small and medium-sized municipalities. A greater number of drug users of abuse is also found in the southeast, followed by northeast and south (BASTOS et al., 2017).

Such data are also corroborated by a study carried out by the Brazilian Ministry of Health when comparing intoxications by area of occurrence, where higher rates of drug use were observed in the urban area than in the rural area, except smoking and current use of alcoholic beverages, for the results obtained in the two areas of occurrence (BRASIL, 2011).

It is also important to evaluate the outlook for DA intoxication not only in statistical terms, but also to analyze three main factors: the profile of the substance of abuse, the profile of the DA user, and the circumstances that encourage the use of these substances. First, it is necessary to classify DA according to their legal status. They can be divided into two groups: legal and illicit. The former has legal status support for their production, distribution, and consumption and are not criminalized. The latter, however, do not have legal support and their production, sale and use are punishable by law (CARLINI et al., 2011; MUAKAD, 2008). Among the licit DA, alcohol is one of the most commonly used and causes the most deaths worldwide, accounting for up to 5.9 % of annual deaths on a global scale (WHO, 2014). This is also the most correlated with hospitalizations for DA and is responsible for causing numerous pathologies throughout life (NOTO et al., 2002; SANTANA et al., 2020). Other licit psychoactive substances associated with intoxication are several classes of drugs: depressant drugs (benzodiazepines, barbiturates, codeine and morphine) and stimulants (nicotine, caffeine and amphetamines) being important in the context of intoxications (CENPRE, 2020; MUAKAD, 2008; UNODC, 2017). In SINITOX the intoxications associated with these substances belonging to the class of medication are inserted in the item "toxic agent: medication", which represents the major cause of intoxications, having much higher numbers when compared to DA intoxications (SINITOX, 2020c).

Regarding illicit drugs, marijuana stands out as the most widely used drug on a global scale. Its consumption is followed by that of ecstasy, opiates, cocaine and amphetamines. DA users have a high number of disability-adjusted life years (DALYs) caused by diseases associated with the use of substances of abuse, with increased mortality and morbidity from their consumption in the last decade (UNODC, 2017).

It is also necessary to evaluate the biopsychosocialcultural aspect of the intoxicated, since the intoxication must be evaluated from several different scopes in order to draw a more reliable profile of the intoxicated. Socioeconomic, occupational and cultural situations may also influence the rates of intoxication. Furthermore, neuropharmacological and genetic characteristics may also influence intoxications (MARANGONI, OLIVEIRA, 2013; MUAKAD, 2008; MUAKAD, 2013; NASCIMENTO et al., 2007; PEREIRA, MIGLIAVACCA, 2014; SILVA et al., 2013).

Finally, it is important to highlight the limitations of the present study. The information shared by SINITOX is a compilation of data about cases of intoxication, which occurred in the national territory and were notified to CIATs (SINITOX, 2020a). These centers are specialized units that provide information to the population and to health professionals, as well as guidance on diagnosis, prognosis, therapeutics and how to prevent intoxications (BRASIL, 2005). Therefore, while there are well-established systems of data collection in the country, SINITOX still depends on the full functioning and cooperation of CIATs to function and provide realistic data. Since 2008, the transfer of information has not occurred systematically, in addition to a decrease in the participation of these centers in the statistics of the system. Data not provided by CIATs to SINITOX are not available for consultation, representing stagnation in the construction of intoxication profiles in the country.

Additionally, in terms of reporting, many CIATs have specific notification tokens, which often leads to disagreements in the classification of intoxication cases (BRASIL, 2005; SANTANA et al., 2011). Therefore, it can be observed that the notifications are not standardized either by the lack of standardization of the notification forms, or by the lack of instruction of the professionals who work in the registration phases, which qualitatively compromises the data of the intoxications (SANTANA et al., 2011). In addition, the sending of data by CIATs to SINITOX is not compulsory; thus, the information disclosed by this system refers only to the centers that send data spontaneously, causing discontinuity in the processing of these data by the system and making it difficult to analyze the trends over a period of time (AZEVEDO, 2006).

Unfortunately, since not all national CIATs are involved in sending data to SINITOX, the data obtained is not completely reliable for the real scenario. In relation to DATASUS - SINAN, it is important to emphasize that this database has important information gaps. Only in recent years the data from the DATASUS - SINAN has been shown to be statistically and numerically relevant. Thus, as with the SINITOX database, it is important to analyze the data extracted from this type of database with caution.

## CONCLUSION

It is possible to conclude that the profile of intoxications by DA in Brazil is currently composed of young men people living in urban areas intoxicated by abusive use. Most intoxicated individuals were cured of DA intoxications.

Finally, this study is relevant, considering that knowing the profile of drug abuse intoxications in a given population, it is possible to identify potential risk conditions to which individuals are exposed and prevention and control measures can be proposed. Further studies are needed on this topic, so that effective strategies are proposed in order to reduce the number of cases of intoxication by DA in Brazil.

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## **CONFLICT OF INTEREST:**

Nothing to declare.

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