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Hospitalizations due to self-inflicted injuries – Brazil, 2002 to 2013

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Abstract *The scope of this article is to describe hospitalizations resulting from intentionally self-inflicted injuries attended by the Unified Health System (SUS) for the 2002-2013 period. It is an observational, descriptive study of hospital admissions in the SUS arising from intentionally self-inflicted injuries in Brazil between 2002 and 2013. A decreasing trend was observed for the rate of hospitalization in individuals aged 10 and above. Hospitalizations were concentrated between 30 to 49 years of age for men, while for women it was between 20 to 29 years of age. The highest rates of hospitalization and hospital deaths were in the Southeast. The main cause of hospitalization was intentional intoxication with medication and unspecified biological substances. Studies of this type provide input for defining prevention strategies taking into consideration the most vulnerable groups and the complexity of factors associated with suicidal behavior.*

Key words *Violence, Self-inflicted injury, Suicide, Epidemiological surveillance, Hospitalization*

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Introduction

In 2002, the World Health Organization (WHO) classified violence into three broad categories: interpersonal, collective, and self-inflicted. The latter, also known as self-harm, is violence a person inflicts upon him/herself and can be subdivided into suicidal behavior and self-injury. Suicidal behavior is characterized by suicidal thoughts, suicide attempts, and suicide itself, whereas self-injury includes acts of self-mutilation, ranging from milder forms such as scratches, cuts, and bites to more severe forms such as amputation of limbs[1,2].The International Statistical Classification of Diseases and Related Health Problems (ICD-10) considers intentional self-injury or self-poisoning and suicide attempts as intentional self-harm[3].

Currently, suicide is the second leading cause of death worldwide among people aged between 15 and 29 years. In 2012, the global suicide mortality rate was equal to 11.4 deaths per 100 thousand inhabitants, reaching 803,894 individuals, representing one death every 40 seconds from this cause[4]. In Brazil, approximately 10,000 people died from suicide in 2011, at a rate of 5.1/100,000 inhabitants[5]. In 2012, the rate was equal to 6/100,000[6].

In Brazil, as in many parts of the world, the suicide mortality rate represents only a small part of the problem of intentional self-harm because there remains a large number of hospital admissions due to these causes that do not result in death, and an even greater number of individuals seek outpatient treatment or do not seek treatment for their injuries at all[1,4]. Deaths, damage caused by suicide attempts, injuries, physical and emotional trauma, and ideations represent the impact of the suicide phenomenon for the Brazilian health sector[7].

In Brazil between 1998 and 2007, the Unified Health System's (Sistema Único de Saúde - SUS) expenditure on hospital admissions resulting from suicide exceeded thirty-five million Brazilian Real (BRL), varying according to gender, age, and geographic region[8].Data from hospital admissions relating to self-harm underestimate the true prevalence of these injuries (a minority of individuals who self-harm seek hospital care)[1], and there is potential for misclassification of the cause of hospitalization in cases such as self-harm through drug overdose.

Information regarding hospitalization in Brazil is available in the SUS Hospital Information System (Sistema de Informações Hospitalares – SIH/SUS). This information is based on hospital admissions authorization (Autorização de Internação Hospitalar – AIH) and provides demographic and clinical data, making it possible to ascertain the morbidity and the mortality rate in regard to SUS's own services and the people insured by it. It also provides data on amounts paid and the length of hospital stays. This information serves to establish the costs involved in hospitalization funded by the SUS[9]. The SIH/SUS uses ICD-10 to standardize records of diseases and external causes and elicit information on hospital admissions, which represent the most severe cases in the injury pyramid[10].For intentional self-harm, especially in hospitalized cases, it is possible to obtain data on its nature through the main diagnosis and on the circumstances of attempted suicide by secondary diagnosis[7].

The national average of SIH/SUS coverage is approximately 80% of hospital admissions, varying between Brazilian regions and states, depending on the user population of private health plans[9]. Studies on this occurrence therefore present a very broad view of these conditions in the Brazilian population towards guiding health promotion policies. Notwithstanding the fragility of the information, analysis of these data is clearly important[11] given the scarcity of information regarding hospital admissions resulting from such injuries. Such information will allow the extent of the problem to be evaluated, groups at risk to be identified, and the effects of prevention programs to be monitored.

The objective of this study is to describe hospital admissions resulting from intentional self-harm, of patients who received care within the SUS, in the period of 2002-2013.

Method

This work was a descriptive observational study of hospital admissions in the SUS due to intentional self-harm, using the Brazilian regions as the unit of analysis.

The data source was the Hospital Information System (SIH/SUS), with data available on the website of the Information Technology Department of SUS (DATASUS) corresponding to the period of 2002-2013, which was divided into three time periods, 2002-05, 2006-09, and 2010-13,for comparison.

Hospital admissions whose secondary diagnosis included causes classified under codes X60 to X84 of the International Classification of Dis-

eases (ICD-10) were selected. The categories were grouped as follows: intentional self-poisoning by drugs and unspecified biological substances (X60-X64); intentional self-poisoning by alcohol (X65); intentional self-poisoning by pesticides and chemicals (X68-X69); intentional self-harm by firearm discharge (X72-X74); intentional self-harm using knives and blunt objects (X78-X79); intentional self-harm by hanging and strangulation (X70); intentional self-harm by jumping from a high place (X80); intentional self-harm by unspecified means (X84); and other categories (X66, X67, X71, X75-X77, X81-X83). Long-term AIH data were excluded.

The analyzed variables were categorized according to gender and age group (10-19 years, 20-29 years, 30-39 years, 40-49 years, 50-59 years, 60-69 years, 70-79 years and over 80 years), for the three periods analyzed. Children were excluded from this study because the literature indicates that suicide deaths in this age group hardly exist, or when they do, they are difficult to classify because the majority are recorded as accidental causes[12]. A study on visits to urgent and emergency services found that the frequency of visits due to attempted suicide corresponds to only approximately 1% in children[13].

Crude measures of the frequency of hospital admissions for attempted suicide were calculated, along with the average length of hospital stay, the average amount of total AIH paid, admission rates (number of hospital admissions for intentional self-harm/resident population x 100,000 inhabitants)[14], and hospital mortality rate (number of admissions for self-harm with discharge due to death/total admissions for self-harm x 100). The SPSS software was used for data analysis.

The proportion of the number of hospital admissions due to external causes of undetermined intent (codes Y10-Y34 of ICD-10) was also analyzed to assess the possibility of losses in the records of attempted suicides.

The databases used are publicly accessible through the Datasus site. The databases do not identify individuals, respecting the ethical principles in human research, in accordance with Resolution No. 466 of December 12, 2012, of the National Board of Health[15].

Results

In the years 2000-2013, there were 105,097 hospital admissions in the SUS in Brazil due to intentional self-harm (288 cases per day) by people older than nine years of age, of whom 63,468 (60.4%) were male and 41,628 (39.6%) were female. Hospitalization rates were 5.6 per 100,000 inhabitants in the study period, 6.9/100,000 inhabitants among men and 4.4/100,000 inhabitants among women (Table 1).

The distribution of hospitalization rates over the years reveals a downward trend, with the lowest figures recorded in 2008 and 2012 (Figure 1).

In the three periods studied, the age groups with the highest hospitalization rates in the country were 30-39 years (8.3 admissions per 100,000 inhabitants between the years 2002 and 2005; 6.9 admissions per 100,000 inhabitants between the years 2006 and 2009; and 6.1 admissions per 100,000 inhabitants between the years 2010 and 2013). The next highest age range was the 40-49 year group (7.8 admissions per 100,000 inhabitants between the years 2002 and 2005; 6.7 admissions per 100,000 inhabitants between the years 2006 and 2009; and 5.9 admissions per 100,000 inhabitants between the years 2010 and 2013) (Table 1).

This scenario remained similar among men. However, among women, the most common age group for the period of 2002-2009 was 20-29 years (6.0 admissions per 100,000 inhabitants between the years 2002 and 2005, 5.1 admissions per 100,000 inhabitants between the years 2006 and 2009; and 4.5 admissions per 100,000 inhabitants between the years 2010 and 2013). In general, all age groups showed a decline in hospitalization rates for both males and females. Between the years 2002 to 2009, the age group with the highest male: female ratio was 50-59 years (the hospitalization rate was 2.6 times higher among men than among women in the period of 2002-2005 and 2.2 times higher among men than women in the period of 2006-2009). Between the years 2010 and 2013, the age group with the highest male: female ratio was 60-69 years (the hospitalization rate was 2.4 times higher among men than among women), as noted in Table 1.

In regard to total admissions, in the three periods analyzed, the region with the highest hospitalization rate due to self-harm was the Southeast, followed by the Northeast in the initial and final study periods and the North in the 2006-2009 range.

The Southeast and Northeast regions were also the ones with the largest proportion of hospital deaths in the three periods studied. The average rate of hospital mortality was higher in the Southeast and Midwest between 2002 and 2009

Table 1. SUS Hospitalizations due to Intentional Self-Harm (number and rate per 100,000 inhabitants), according to age group and gender. Brazil. 2002-2013.

Period	Age group	Total		Male		Female		M/F
		n	Rate	n	Rate	n	Rate	
2002-2005								
	10-19	6,107	4.4	2,778	3.9	3,329	4.8	0.8
	20-29	9,780	7.4	5,842	8.7	3,938	6.0	1.5
	30-39	8,974	8.3	5,885	10.9	3,089	5.7	1.9
	40-49	6,855	7.8	4,563	10.6	2,292	5.1	2.1
	50-59	3,589	6.2	2,535	9.1	1,054	3.5	2.6
	60-69	1,652	4.7	1,113	6.9	539	2.9	2.4
	70-79	801	4.1	456	5.3	345	3.1	1.7
	80 e +	493	6.2	231	7.5	262	5.4	1.4
2006-2009								
	10-19	5,109	3.7	2,348	3.4	2,760	4.1	0.8
	20-29	8,989	6.4	5,445	7.7	3,544	5.1	1.5
	30-39	7,965	6.9	5,021	8.8	2,944	5.1	1.7
	40-49	6,417	6.7	4,161	8.8	2,256	4.6	1.9
	50-59	3,532	5.2	2,362	7.3	1,170	3.3	2.2
	60-69	1,542	3.9	993	5.4	549	2.6	2.1
	70-79	783	3.5	448	4.7	335	2.7	1.8
	80 e +	433	4.5	174	4.8	259	4.4	1.1
2010-2013								
	10-19	4,583	3.3	2,030	2.9	2,553	3.8	0.8
	20-29	7,882	5.6	4,772	6.8	3,110	4.5	1.5
	30-39	7,564	6.1	4,640	7.5	2,924	4.7	1.6
	40-49	6,079	5.9	3,875	7.7	2,204	4.2	1.8
	50-59	3,433	4.4	2,222	6.0	1,211	3.0	2.0
	60-69	1,506	3.2	1,012	4.7	494	2.0	2.4
	70-79	689	2.8	405	3.8	284	2.0	1.9
	80 e +	340	3.0	157	3.6	183	2.6	1.4

Source: Hospital Information System - SIH/SUS.

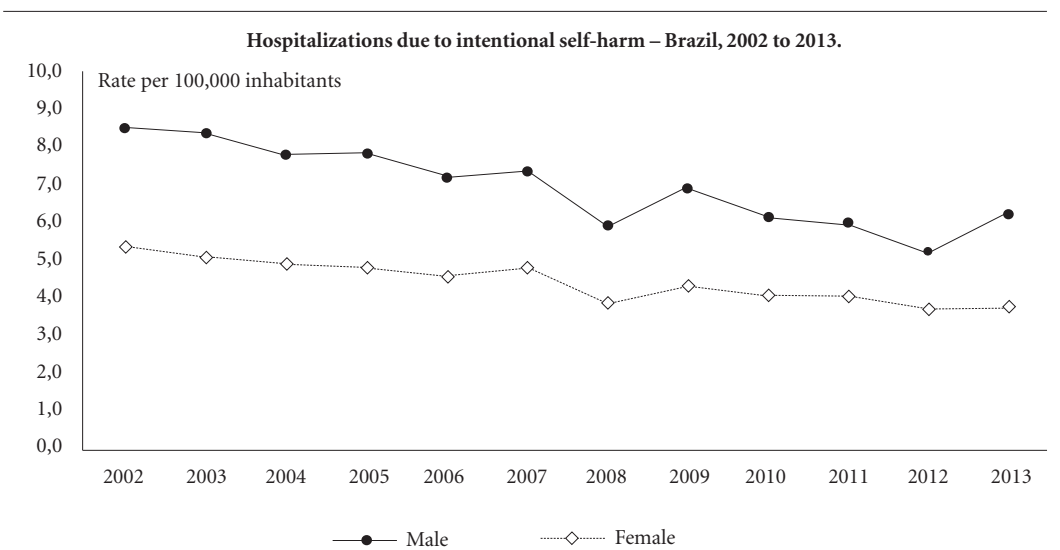

Figure 1. SUS Hospitalization Rate due to Intentional Self-harm (per 100,000 inhabitants), according to gender. Brazil, 2002-2013*.

Source: Hospital Information System – SIH/SUS. * Patients under 10 years of age were not included.

and in the Southeast and South between 2010 and 2013.

The average length of hospital stay (in days) was higher in the South and Southeast regions during the study period. However, from 2010 to 2013, the Northeast region had the same average length of stay as the Southeast. As shown inTable 2, the North region had the highest average amount paid for hospital admissions resulting from intentional self-harm in the 2002-2005 period; the Southeast region from 2006 to 2009; and the South from 2010 to 2013.

Intentional self-poisoning by drugs and unspecified biological substances (X60 to X64) accounted for the largest total hospitalization rates and female rates across the three periods

Table 2. Indicators of SUS Hospitalizations due to Intentional Self-Harm [number, proportion (%), rate per 100,000 inhabitants, and value in Brazilian reals] according to region and gender. Brazil. 2002-2013*.

Place of residence and indicators	2002-2005	2006-2009	2010-2013
Total hospitalizations, nº (%)			
North	4,398 (11.50)	5,045 (14.51)	2,300 (7.17)
Northeast	4,627 (12.10)	4,811 (13.84)	6,043 (18.84)
Southeast	22,714 (59.48)	19,540 (56.20)	18,852 (58.77)
South	3,572 (9.34)	3,299 (9.50)	2,884 (9.99)
Midwest	2,940 (7.69)	2,075 (6.49)	1,997 (6.23)
Brazil	38,251 (100.0)	34,770 (100.0)	32,076 (100.0)
Total hospital deaths, nº (%)			
North	70 (5.12)	50 (4.09)	33 (2.55)
Northeast	150 (11.98)	199 (16.28)	231 (17.84)
Southeast	911 (66.69)	807 (66.04)	853 (65.87)
South	122 (8.93)	93 (7.61)	116 (9.96)
Midwest	113 (8.27)	73 (5.97)	62 (4.79)
Brazil	1,366 (100.0)	1,222 (100.0)	1,295 (100.0)
Hospital mortality (per 100)			
North	1.59	0.99	1.43
Northeast	3.24	4.14	3.82
Southeast	4.01	4.13	4.52
South	3.42	2.82	4.02
Midwest	3.84	3.52	3.10
Brazil	3.57	3.51	4.04
Average hospital mortality rate			
North	1.63	0.95	1.40
Northeast	3.24	4.14	4.14
Southeast	4.01	4.14	4.52
South	3.41	2.92	4.17
Midwest	3.82	3.45	3.10
Brazil	3.57	3.50	4.05
Average length of hospital stay (days)			
North	3.95	3.93	3.98
Northeast	3.58	3.75	4.23
Southeast	4.23	4.00	4.23
South	4.30	4.88	5.60
Midwest	4.13	3.65	4.03
Brazil	4.13	4.05	4.33
Average amount paid per admission (BRL)			
North	411.02	389.95	409.93
Northeast	385.44	505.94	656.52
Southeast	372.83	581.02	883.03
South	408.99	573.08	940.15
Midwest	297.17	363.02	492.47
Brazil	375.11	533.10	790.24

Source: Hospital Information System - SIH/SUS. *Patients under 10 years of age were not included.

Table 3. SUS Hospitalizations due to Intentional Self-Harm (number and rate per 100,000 inhabitants), according to injury type and gender. Brazil. 2002-2013*.

Types (CID10)	Periods	N	Rate per 100,000 inhabitants			M/F
			Total	Male	Female	
X60-X64						
	2002-2005	12,081	2.05	1.56	2.44	0.64
	2006-2009	13,040	2.08	1.85	2.30	0.81
	2010-2013	10,564	1.59	1.29	1.88	0.69
X65						
	2002-2005	8,986	1.52	2.63	0.38	6.93
	2006-2009	7,551	1.20	2.08	0.36	5.78
	2010-2013	6,556	0.99	1.65	0.35	4.76
X68-X69						
	2002-2005	6,686	1.13	1.12	1.09	1.03
	2006-2009	5,346	0.85	0.90	0.80	1.12
	2010-2013	5,673	0.85	0.90	0.81	1.10
X70						
	2002-2005	151	0.03	0.04	0.01	4.75
	2006-2009	178	0.03	0.05	0.01	4.22
	2010-2013	150	0.02	0.04	0.01	6.03
X72-X74						
	2002-2005	1,778	0.30	0.52	0.07	7.45
	2006-2009	687	0.11	0.19	0.03	7.03
	2010-2013	1,114	0.17	0.30	0.04	8.58
X78-X79						
	2002-2005	2,613	0.44	0.70	0.16	4.33
	2006-2009	2,261	0.36	0.59	0.14	4.39
	2010-2013	2,256	0.34	0.56	0.12	4.51
X80						
	2002-2005	197	0.03	0.04	0.03	1.55
	2006-2009	376	0.06	0.08	0.04	1.80
	2010-2013	1,490	0.22	0.36	0.09	4.01
X84						
	2002-2005	3,724	0.63	0.87	0.38	2.27
	2006-2009	3,370	0.54	0.74	0.34	2.13
	2010-2013	1,665	0.25	0.33	0.17	1.94
Others						
	2002-2005	240	0.04	0.38	0.29	1.29
	2006-2009	1,022	0.16	0.31	0.31	1.00
	2010-2013	2,608	0.40	0.42	0.37	1.14

X60-X64 - Intentional self-poisoning by drugs and unspecified biological substances; X65 - Intentional self-poisoning by alcohol; X68-X69 - Intentional self-poisoning by pesticides and chemical products; X72-X74 - Intentional self-harm by firearm discharge; X78-X79 - Intentional self-harm by knife or blunt object; X70 - Intentional self-harm by hanging or strangulation ; X80 - Intentional self-harm by jumping from high place; X84-X84 - Intentional self-harm by unspecified means. Source: Hospital Information System - SIH/SUS.
* Patients under 10 years of age were not included.

studied. All other means used for self-harm were more frequent among men. The second highest total hospitalization rate was for self-poisoning by alcohol, and the third was for self-poisoning by pesticides and chemicals. The lowest hospitalization rates were for self-harm by hanging and strangulation (X70) in the three periods studied and for both genders. Admissions due to injuries by firearm discharge had the highest male: female ratio across the three periods (8.5 times higher among men than women from 2010 to 2013), as noted in Table 3.

The North Region had an unstable proportion of undetermined cases in the study period,

Table 4. Proportion (%) of SUS Hospitalizations for Injuries due to external causes of undetermined intent (CID10-Y10-Y34) by region. Brazil. 2002-2013*.

Year	North	Northeast	Southeast	South	Midwest	Brazil
2002	8.20	4.43	3.78	2.64	2.90	4.02
2003	9.44	3.88	3.58	2.43	3.02	3.89
2004	11.02	2.41	3.52	2.60	3.20	3.70
2005	11.06	2.19	3.85	3.87	3.01	4.00
2006	11.72	2.20	4.15	3.73	2.53	4.14
2007	10.64	2.51	4.33	3.46	2.36	4.12
2008	7.55	2.29	3.62	2.70	1.67	3.34
2009	6.01	2.65	4.64	3.10	2.23	3.83
2010	6.02	3.37	5.96	4.13	2.71	4.77
2011	8.16	3.22	5.84	3.93	2.87	4.82
2012	10.18	3.76	6.32	4.41	4.50	5.55
2013	10.26	4.73	6.17	5.90	5.44	6.08
Mean	9.19	3.14	4.65	3.58	3.04	4.36

* Patients under 10 years of age were not included.

with a steady increase from 2002 and a fall between 2008 and 2010, returning to 10% of external causes of undetermined intent. This region has the highest average of undetermined cases for the entire study period (9.19%), corresponding to more than twice the average of admissions in the same period in Brazil (4.36%)[16], as shown in Table 4.

Discussion

This study shows a decreasing trend in the hospitalization rate due to self-harm in individuals aged 10 or above in Brazil, with a higher rate observed in males than females. Hospitalizations are concentrated on the male population in the 30-49 year age group. Among women, the predominant age group for hospitalizations is 20-29 years. The highest rates of both hospital admissions and deaths were found in southeastern Brazil. The main cause of hospitalization (total and for females) in the three periods studied was intentional self-poisoning by drugs and unspecified biological substances (X60 to X64), followed by intentional self-poisoning by alcohol and pesticides.

Self-harm is considered a major public health problem, as it is a sign of the discomfort and suffering of individuals. The act is generally related to a feeling of inability to identify viable alternatives for ending conflict and suffering, and such people opt to take their own life in response[1]. Both in regard to population size and in absolute figures, suicide attempts are more common among young people[8,14,17]. However, among the elderly, there is a closer relationship between attempted and completed suicidal acts[7].

It is estimated that a suicide directly affects at least six other people and can affect hundreds when the event occurs in a school or workplace[18]. It therefore has a strong impact on health services[18-21]. A number of social, microsocial, emotional, medical, and environmental factors are associated with the risk of suicide, including disabling physical diseases, mental disorders (particularly depression), mental illness, abuse of alcohol and other drugs, and family, community, institutional, emotional, and socioeconomic problems[7,22].

One of the main risk factors for suicide, in addition to mental disorders, is a history of previous ideations and attempts to cause one's own death. Botega et al.[23] note that 15-25% of people who attempt suicide will repeat the attempt within a year, and 10% of these people will die from this cause over a 10-year period. The WHO also considers that for each adult (18 years old) whose cause of death is suicide, there are 20 suicide attempts[4].

The decreasing trend in the hospitalization rate due to intentional self-harm found in this study can be explained by the fact that only a few suicide attempts result in injury or poisoning requiring medical treatment.[4] Suicide attempts are

more likely to result in death among men than among women, and as age increases, so does the severity of resulting injuries[24,25.] Kodu et al.[26], in a study of 1,348 individuals who in 2008 sought the psychiatric emergency services of a hospital in Morioka in Japan after a suicide attempt, found a male:female ratio of 1:2. In Minas Gerais, from 1998 to 2003, the total number of hospital admissions in the SUS due to self-inflicted violence was equal to 14,443, of whom 55.4% were men, thus corroborating our findings[14].

Souza et al.[27] conducted a study in Bahia, in the period from 2006 to 2011, and noted that suicide attempts were more frequent in the 20-39 age group (57.7%). Almeida et al.[28] found the 15-34 years age group to be the most frequent among subjects who attempted suicide, while Pordeus et al.[17] reported the greatest frequency in the 10-19 age group. The findings in regard to the 10-19 age group in the country are similar to the data found among adolescents in Minas Gerais (1998-2003)[14] and Brazil (1998-2007)[8]. The hypothesis that suicide attempts among older people are more likely to lead to a fatal outcome[7] is also addressed and could explain the lower hospitalization rates observed in this age group, particularly in the last three years analyzed in this study (2010-2013), while mortality rates due the same group of causes in this age group have a growing trend. Although hospital admissions data for children under 10 were excluded from this analysis, it can be observed that the prevalence of self-harm in this age group is an important figure and that further analysis is required to clarify whether such admissions are due to misclassification of the primary or secondary diagnosis or whether they actually refer to intentional self-harm, a topic not covered in this study.

The distribution of hospital admissions by region of the country corroborates the results demonstrated in a previous study[8] that also uses SIH/SUS data, covering the period 1998-2007, in which the highest percentages were found for the Southeast region, followed by the Northeast, with a growing trend in the North region. However, in this study, after the increase between the period 2002-2005 and 2006-2009 for this region, the percentage for the 2010-2013 period decreased by approximately 50%, which raises questions about the reliability of the records of hospital admission for self-harm in the region. It should be noted that the South-Southeast axis accounted for 65.22% of deaths, a fact that may be associated with a larger number of inhabitants in these regions as well as other social and environmental factors[24].

Studies on hospital morbidity due to self-harm have indicated self-poisoning as the most frequent method of suicide attempts for both genders[14,17,28]. The data observed in this study point to a greater frequency of self-poisoning by drugs and biological substances across the country and for females and of self-poisoning by alcohol for males as the leading causes of hospital admission for self-harm during the period. These data are similar to the results found by Santos et al.[29], who found drug use to be the main cause of hospital admission due to self-harm among women between 1998 and 2009,while alcohol intake was the main cause among males during the same period . These authors discuss measures to limit the main means of suicide attempts by self-poisoning.

Regarding the methods used for intentional self-harm resulting in hospitalization, a high frequency of intentional self-poisoning by drugs and unspecified biological substances was observed. Similar data were also found in other studies[8,16,28,29]. A study conducted by Marín-León and Barros[16] found that poisoning was most used in cases of suicide attempts among women, while among men, hanging was the most frequent method. These findings confirm that men use more lethal irreversible tools and weapons, resulting in higher death rates, compared to women.

Conclusions

The first conclusion to be drawn is the need for further research combining multiple data sources to ascertain the real scenario of self-harm occurring across the country. The focus of this study is hospitalization, which excludes self-harm that occurs or is treated outside the hospital setting, including cases that are resolved in First Aid and Emergency units[30]. According to the WHO[1], there is evidence that only 25% of people who try to kill themselves are hospitalized, and hospitalization corresponds to the most severe cases. There is also a possibility of underreporting in hospital records, as in the same study period, there was an increase in the proportion of hospital records classified as external causes of undetermined intent, despite the decrease in hospitalization rates for self-harm. It should be noted that in 2008, the year with the steepest decline in hospitalization rates in this study, there was a change in the information system with the implementation of the SUS's Table of Procedures, Drugs, Orthotics, Prosthetics and Special Materi-

als (Tabela Unificada de Procedimentos, Medicamentos, Órteses, Próteses e Materiais Especiais), according to Ordinance GM/MS no. 2,848 of November 6, 2007[31]. This change in the information system had the same effect on all hospitalization causes.

This study found a hospitalization rate due to self-harm of 5.6 per 100,000 inhabitants, with the highest rates in the 30-39 years age group and the largest proportion in the Southeast region. The primary means used for self-harm that led to hospitalization was self-poisoningby drugs and biological substances. In the analyzed period, there was a downward trend in hospitalization rates due to self-harm in the SUS.

The phenomenon of self-inflicted death and injury, with all its consequences, increasingly calls for special attention from public health agencies aroundthe world[1,23.] There is evidence that society, families, and the health system can effectively prevent this self-harm, and concrete proposals now exist on the correct procedures to follow. The WHO has published several handbooks with guidelines for primary care and mental health professionals and educators and to guide media behavior, all of which have been translated into Portuguese[32-35]. The Ministry of Health (based on these WHO publications) also prepared a National Suicide Prevention Plan in 2006[36]. However, despite these documents, proactive measures in favor of people most vulnerable to self-inflicted injury and death are still almost non-existent. Monitoring concrete prevention actions in health care networks at many different levels is very important to reduce the suffering of people who try to kill themselves because, as the literature notes, there is a close relationship between self-destructive ideation and attempted and completed suicide[1,7,14]. This relationship underlines the importance of studies on hospital admissions for self-harm that can help define prevention strategies, considering the most vulnerable population groups and the complexity of associated factors.

Collaborations

RA Monteiro, CA Bahia, EA Paiva, NNB Sá and MCS Minayo participated equally in the conception, design, data analysis and writing of the article.

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