Profile of suicide attempts treated in a Public Hospital of Rio Branco, Acre State from 2007 to 2016

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Manuscript received: September 2018
Manuscript accepted: November 2018
Version of record online: April 2019

Abstract

Introduction: It is estimated that 1 million suicide deaths are occurring annually in the world, and studies suggesting that there are 10 to 40 attempts for each consummation of suicide, revealing its high impact (personal, social and economic) and being considered by the WHO as a serious public health problem.

Objective: Evaluating the profile of suicide attempts at a public hospital in Rio Branco, from 2007 to 2016.

Methods: This is a retrospective-descriptive study, with secondary. The sample consisted of 569 cases of suicide attempts of people residing in the city of Rio Branco. The analysis was carried out through simple, absolute and relative frequencies of the variables, stratified by treatment year, sex, age group, methods used and region of residence.

Results: There was a significant difference in relation to sex after a change in the system in 2014, and the frequency in the female sex was higher. Intoxication was the most commonly used method, mainly by women. The highest risk group was from ten to 29 years old, totaling more than 70% of the cases, revealing the prevalence of suicide attempts in teenagers and young adults.

Conclusions: This study indicates that suicide attempts in the municipality of Rio Branco - Acre state are more frequent in teenagers and young adults, of both sex, in the age range from ten to 29 years old, and that drug intoxication is the most used method, mainly among women.

Keywords: suicide, suicide attempts, epidemiology, public health, Amazon.

What is the purpose of this study?
The interest in this study was aroused by the high index of suicide attempts at a public municipality of Rio Branco and the great relevance in evaluating characteristics of these entries since the suicide attempt is one of the main risk factors for consummation of suicide and is considered a serious public health problem. In this sense, the objective of this paper is to describe the characteristics of the entries for suicide attempts registered in a public hospital of the municipality of Rio Branco, Acre, from 2007 to 2016, and to provide in order to broaden reflection on a possible prevention of this problem.

What researchers did and found?
This study indicates that suicide attempts in the municipality of Rio Branco - Acre State are more frequent in adolescents and young adults of both sexes, in the age range of 10 to 29 years, and that drug intoxication is the most common method especially among women.

What do these findings mean?
The findings of this study indicate that, in view of the complexity of suicidal behavior, the identification of the characteristics of the suicide attempts at the health units is fundamental to increase the knowledge about the regional particularities of this serious public health problem and, in this way, planning and implementation of suicide prevention strategies more in line with the reality of the population for which it is intended. In addition, the findings also suggest that several factors contribute to the lack of more complete data on suicide attempts, such as the difficulty in identifying the intentionality of the act, the under-registration due to the registration of many attempts identified as “accidental” in health facilities, which, consequently, increases underreporting, and the absence of systematic records on suicide attempts. Thus, considering that the previous suicide attempt is the greatest predictor of suicide risk, new studies and greater attention in the identification of these entries in the health units are essential for the expansion of knowledge and coping with this problem.

http://dx.doi.org/10.7322/jhgd.157750

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INTRODUCTION

According to the World Health Organization (WHO), suicide can be considered as an intentional act of an individual to end their own life; currently, it is among the two main causes of death of people in the age range from 15 to 29 years old. In Brazil, there are approximately 30 deaths per day, and in the world, there is one death by suicide every 40 seconds, which corresponds to approximately 800 thousand to one million people, ending their lives every year. In addition, it is estimated that for each suicide death there are ten to 40 attempts, indicating that at least ten million people worldwide may attempt suicide each year, which reveals its high emotional, social and economic impact. So much that WHO considers suicide as a serious public health problem, which is unfortunately still neglected, because even though it is seen as a preventable problem, it is estimated that by 2020 suicide could represent 2.4% of the total number of deaths.

Despite these alarming figures, studies have shown that data is underestimated, since underregistration and underreporting end up making the actual suicide rates unknown. When talking about suicide attempts, the situation is even worse, because the difficulty in determining the intentionality of the act makes the majority of the attempts dissipate in health centers among the incidents considered as accidental, and in most countries, there are no systematized records about suicide attempts.

This situation is also considered to be serious, because, in addition to underreporting, when a suicide attempt is not identified, patients may enter and leave health centers without receiving the necessary follow-ups and referrals, and may remain at risk of death, since, according to Botega and Garcia, the assistance provided to those who attempted suicide is a fundamental prevention strategy, because these patients constitute the group at the highest risk of suicide.

Each year, death by suicide is increasing in Brazil, with 11,821 deaths due to suicide in 2012, according to data from the World Health Organization. One of the main risk factors to be considered is having a history of attempted suicide, since, according to Botega, it is estimated that the risk increases by at least 100 times in relation to the indices in the general population, which makes it fundamental, for prevention strategies, to know the profile of suicide attempt cases. However, so far, the data available about the municipality of Rio Branco and the State of Acre is found in the Mortality Information System (Sistema de Informação de Mortalidade - SIM) and the Disease Notification Information System (Sistema de Informação de Agravos de Notificação - SINAN) of the Ministry of Health; there is a lack of studies aimed at identifying the prevalence of suicides and attempts in the region, as well as prophylaxis actions.

Thus, the objective is analyzed the profile of suicide attempts in the city of Rio Branco, Acre, Brazil from 2007 to 2016.

METHODS

This was a descriptive-retrospective study, with secondary data, about the suicide attempts records stored in the Integrated System for the Computerization of Hospital Environments (Sistema Integrado de Informática de Ambiente Hospitalar - HOSPUB / DATASUS) of a public hospital in the municipality of Rio Branco - Acre state, from 2007 to 2016. Data was provided in electronic spreadsheets, without the personal identification data of patients, with the authorization from the Department of Education and Research of the State Secretary of Health of Acre (Departamento de Ensino e Pesquisa da Secretária Estadual de Saúde do Acre - SESACRE) and the hospital directors.

Out of the 688 records of suicide attempts, only the non-institutionalized cases of patients residing in the city of Rio Branco, Acre, Brazil were selected, excluding 75 records from other municipalities or neighboring states, and 31 patient records from penitentiary and socio-educational institutions. Five cases were removed due to the lack of identification of the municipality of the patient, another five were removed due to the information that the record had been canceled, and three were removed due to age (two, five and seven years old) associated with the reasons for the hospitalization (fall/suicide attempt), which suggest a possible typing error. The final sample was composed of 569 cases.

In order to find out the frequency of the geographic distribution of suicide attempts, due to the large number of neighborhoods in the municipality, it was decided that an adapted version of the Regional Division of the Municipal Secretariat of Social and Community Articulation (Divisão por Regionais da Secretaria Municipal de Articulação Comunitária e Social - SEMACS) would be used, which presents the urban perimeter of the municipality of Rio Branco, divided into ten areas. New neighborhoods, that were not included in any Region, were included to the closest location.

For the data analysis, five variables related to the profile available in the system were used: treatment year, age, sex, neighborhood of residence, and method used in the suicide attempt. For the statistical analysis, the Kruskal Wallis and Student’s T tests were applied, using the GraphPad Prism 6.0 software, considered with statistical significance when p<0.05.

The present research did not have to pass through an ethics committee in research, since it is a research with secondary data.

RESULTS

The sample consisted of 569 records of suicide attempts from 2007 to 2016, of which 297 (52.2%) were from the female sex, and 262 (47.8%) from the male sex; distributions per year of hospitalization and sex are shown in Figure 1.
However, from 2013, there is an increase in the record of women’s hospitalizations, and there is a graphic inversion in the follow-up of the general curve, which then goes on to be followed by variations of the female sex.

This significant change occurred after a change in the HOSPUB (Public Hospital) in 2014, when the Suicide Prevention Center, implanted by the hospital’s Psychology Service, asked the head of the Information Technology Department to include new hospitalization reasons to the system, so that suicide attempts could be better identified at the time of registration, since many were being registered as accidents or only as an attempt to commit suicide, without having any more precise information about the method used.

This change proposal happened after it was perceived that there was a divergence between the numbers of cases treated by the psychology service compared to the amount registered in the system, which led to the elaboration of a “Risk List”, which included the main hospitalization reasons that could be covering up suicide attempts. This list was included in HOSPUB by duplicating the main hospitalizations considered to be “accidental”, associated with the “/Attempted Suicide” add-on. The following new reasons started to exist in the system: Melee Weapon/Attempted Suicide, Firearm/Attempted Suicide, Exogenous Poisoning/Attempted Suicide, Medication Intoxication/Attempted Suicide, Chemical Poisoning/Attempted Suicide, Poison Intoxication/Attempted Suicide, Fall from Heights/Attempted Suicide, Burn/Attempted Suicide, and Suture/Attempted Suicide.

The impact of this change in the HOSPUB can also be observed in the statistical analysis by sex, to enable visualization, the total period was divided, from 2006 to 2017 (Figure 2: A, B, C, D) into three blocks so that the years after the change in the system (2014 to 2016) could be observed separately. In this way, the period from 2014 to 2016 was represented in figure 2D, since it characterized the last three years of this study, and the previous years, 2006 to 2013, were divided randomly into two groups, the first being from 2007 to 2009 (Figure 2B), the second from 2010 to 2013 (Figure 2C) and the last from 2014 to 2016 (Figure 2D), when there was a significant difference (p <0.001) between sex only in the period from 2014 to 2016, after the change in HOSPUB, because the frequency of females was almost double the one of males (Figure 2).
Suicide attempts, without specifying the method used, continued to be recorded in the system; however, new entries associated with methods enabled the existence of more detailed records, by specifying, in the medical records, suicide attempts that occurred due to poisoning, falls from heights, burns, sutures, melee weapon and firearm wounds. Before the change in the system in 2014, it was not possible to obtain this information through the database. Thus, in addition to enabling the increase in the number of reports of suicide attempts, it was also possible to know the methods used and their variations, as shown in Figure 3.

As for the methods, it was observed that there were more reports of Medication Intoxication, with significant differences (p<0.001) compared to all other methods. The second most used method was Poison Intoxication, which as well as presenting a significant difference in relation to Medication Intoxication (p<0.001), also revealed a statistically significant difference (p<0.05) in relation to Chemical Poisoning, Fall from Heights, Burn, Melee Weapon and Firearm Injuries (Figure 3).

Figure 3: Average number of suicide attempts in the period from 2014 to 2016, distributed for new hospitalization reasons. B = Burn; F = Firearm; Bl = Blade; CP = Chemical Poisoning; FH = Fall from Heights; EP = Exogenous Poisoning; PI = Poison Intoxication; DP = Drug Poisoning. * p<0.05, ** p<0.01, *** p<0.001.

When comparing the sum of all intoxications with the general total of the other methods, there is a statistical significance (p<0.001), as well as in relation to the female sex (p<0.001), revealing that there is a predominance of intoxications by women in comparison to the other methods, according to Figure 4.

Figure 4: Comparison between intoxications and other methods of suicide attempts in the period from 2014 to 2016. I.T = Intoxications - Total; O.T = Other methods - Total; I.F = Intoxications Female; O.F = Other methods Female; I.M = Intoxications Male; O.M = Other methods Male.

In addition, the analysis of data by sex in relation to the reasons included in the system, reveals that the frequency of new cases in the female sex (77%) is more than triple in relation to the male sex (23%), with the predominance of women in relation to all kinds of intoxications (Medication - 79%, Poison - 84%, Exogenous - 78%, Chemical - 75%), and to other methods (Fall from Heights - 80% and Burn - 100%), while in men, the frequency was higher only in the use of Melee Weapons (67%) and Firearms (100%).

In relation to the age ranges, there was a greater general frequency in the 20-29 year-old range,
corresponding to 48% of the total and of ten to 19 years old, with 23%, totaling more than 70% of the suicide attempts in the age range from ten to 29 years, constituting the greater risk group for both sex. However, among women, a peak was observed in the age group of ten to 19, with 65% of the cases, and among men, two peaks were observed, both in the elderly; the first was in the age group of 60-69, with 87.5% of the cases, and the second in the range above 70 years old, with 75%, totaling more than 83% of the attempts in men over 60 years old, in comparison to women in this same age group, as explained in Figure 5.

Figure 5: Average suicide attempts by age group and sex, from 2014 to 2016.

As for the geographic distribution of patients’ places of residence, it was verified that the four regions with the highest number of cases treated at the hospital came from areas that are near the health center of the study, located in the region of the Cadeia Velha neighborhood; the largest number of cases came from the Region of the Estação Experimental neighborhood. The three regions that presented the lowest number of suicide attempt cases treated at the hospital are precisely the three most geographically distant: Region of the Calafate, Vila Acre and Belo Jardim neighborhoods (Figure 6). Apart from this, it is important to highlight that in two of these regions within the lowest number of records, there are Emergency Care Units (Unidades de Pronto Atendimento - UPA).

Figure 6: Geographic distribution of suicide attempts by Regions in the period from 2014 to 2016, Rio Branco, AC. Brazil.
DISCUSSION

This study characterized the profile of the hospitalizations for suicide attempts and found that, in the distribution of the number of records per year and sex, there was initially a predominance of the male sex, which is not in line with most of the findings in other studies, indicating that the attempts are more frequent in women. However, after a change in the system in 2014, which made it possible to better detail the hospitalizations due to suicide attempts, the number of records of the female sex practically doubled in relation to the male sex, in line with data found in literature. This inversion may have occurred due to the new possibility of recording hospitalizations due to suicide attempts which used less lethal methods and that were going unnoticed among records that were considered accidental, such as intoxications, falls from heights and burns. This indicates that before the change in the system, only the most serious cases were registered, and/or the ones that left no doubt in relation to being a case of self-violence. This would also explain the greater number of men found in the attempts recorded before the change in the system, since, according to literature, they tend to use more aggressive methods.

As for the methods, the findings in this study also confirm data from other studies, indicating the use of intoxications by medication and poisons as the most frequent in suicide attempts, especially among women. As for the at risk age range found in this study, it reaffirms the severity pointed out in the literature about the high rate of suicide attempts among teenagers and young adults, of both sex, since more than 70% of the suicide attempts occurred in people under the age of 29, although sex analysis shows some differences in the age range, with ten to 19 years having more cases among women and over 60 among men.

In the analysis of the geographical location, the greater frequency of cases came from regions closer to the hospital of the study, and those that presented smaller frequencies, besides being more distant, have Emergency Care Units (Unidades de Pronto Atendimento - UPA) that also handle suicide attempts, showing that the choice of patients of a closer health unit to their home could probable have influence the percentage of treatments registered and the studied hospital. Thus, for it to be possible to analyse the existence of other relations between the number of cases of suicide attempts and patient’s place of residence, it would be necessary to analyses the socio-demographic characteristics of each region, making it necessary to carry out new researches that are willing to broaden the comprehension of this issue.

In conclusion, this study points out that suicide attempts in the municipality of Rio Branco - Acre state are more frequent among teenagers and young adults of both sex, in the age group from ten to 29 years, and medication intoxication is the most used method, especially among women.

Some limitations should be pointed out in this study, since only the suicide attempts recorded as such in the system were analyzed, without considering the cases mistakenly registered as accidents, either due to registration failures or to information omissions by patients and their family, who prefer not to declare a suicidal behavior. Secondly, due to the use of secondary data, it was not possible to detail the studied profile, only the information contained in the system bulletins was analysed. And thirdly, the fact that only one health unit was informed did not allow for the creation of a profile of the suicide attempts of the Rio Branco municipality as a whole. On the other hand, the strengths of this research include the fact that, so far, there are practically no other published studies on suicide attempts in the State of Acre, and the representativeness of the sample because it is a ten year analysis of the records of the health unit, which is the main gateway of the municipality for urgency and emergency cases.

The positive point was that the alteration in the system, as well as increasing the registration of cases, contributed to the identification of suicide attempts, giving greater visibility to less lethal attempts, but no less important, regarding the need for mental health care. New studies and the correct identification of these entries among cases that are considered accidental are fundamental to offer more adequate care to patients and to improve suicide prevention strategies.

REFERENCES


Resumo

Introdução: Estima-se que 1 milhão de mortes por suicídio ocorram anualmente no mundo, e estudos sugerem que há 10 a 40 tentativas para cada consumação de suicídio, revelando seu alto impacto (pessoal, social e econômico) e sendo considerado pela OMS como um grave problema de saúde pública.

Objetivo: Avaliar o perfil das tentativas de suicídio registradas no banco de dados de um hospital público de Rio Branco/AC, no período de 2007 a 2016.

Método: Este é um estudo retrospectivo-descritivo, com secundária. A amostra foi composta por 569 casos de tentativas de suicídio de pessoas residentes na cidade de Rio Branco. A análise foi realizada por meio de frequências simples, absolutas e relativas das variáveis, estratificadas por ano de tratamento, sexo, faixa etária, métodos utilizados e região de residência.

Resultados: Houve uma diferença significativa em relação ao gênero após uma mudança no sistema em 2014, e a frequência no gênero feminino foi maior. A intoxicação foi o método mais comumente usado, principalmente por mulheres. O grupo de maior risco foi de 10 a 29 anos, totalizando mais de 70% dos casos, revelando uma maior prevalência de tentativas de suicídio em adolescentes e adultos jovens.

Conclusão: O presente estudo aponta que as tentativas de suicídio no município de Rio Branco/AC são mais frequentes em adolescentes e jovens adultos, de ambos os sexos, na faixa etária dos 10 a 29 anos, sendo a intoxicação medicamentosa o método mais utilizado, principalmente entre as mulheres.

Palavras-chave: suicídio, tentativas de suicídio, epidemiologia, saúde pública, Amazônia.