# SOCIODEMOGRAPHIC PROFILE OF ELDERLY SUICIDE VICTIMS IN A NORTHEASTERN STATE OF BRAZIL

## PERFIL SOCIODEMOGRÁFICO DE IDOSOS VÍTIMAS DE SUICÍDIO EM UM ESTADO DO NORDESTE DO BRASIL

## PERFIL SOCIODEMOGRÁFICO DE ANCIANOS VÍCTIMAS DE SUICIDIO EN UN ESTADO DEL NORDESTE BRASILEÑO

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Objective: characterize the profile of elderly suicide victims and identify the method used for committing suicide. Method: descriptive epistemological study conducted at an Institute of Legal Medicine of reference. The sample was comprised of 61 death certificates for suicides that occurred between 2007 and 2014. A questionnaire was used for the data collection. The data was treated through a descriptive statistical analysis. Results: the profile of elderly people who committed suicide had the following characteristics: men, low level of education, retired, married and state capital residents. The most frequent location and method was the home, by hanging. Conclusion: sex, level of education, marital status, employment status and location of residence were the main variables that characterized the profile of the elderly people who had committed suicide. A physical method (hanging) was the main strategy used and a private location (the home) was the place of choice for committing the act.

Keywords: Mortality. Aged. Suicide.

*Objetivo: caracterizar o perfil do idoso vítima de suicídio e identificar os meios utilizados para cometer o suicídio. Método: estudo epidemiológico, descritivo, realizado em um Instituto de Medicina Legal de referência. A amostra foi constituída de 61 declarações de óbito por suicídio ocorridos no período entre 2007 e 2014. Para a coleta, utilizou-se o questionário. Os dados foram tratados por meio de análise estatística descritiva. Resultados: o perfil do idoso que cometeu suicídio foi o de homens, com baixa escolaridade, aposentados, casados e residentes na capital do estado. Domicílio e enforcamento foram local e meio frequentes. Conclusão: sexo, escolaridade, estado civil, situação laboral e área de moradia foram as principais variáveis que caracterizaram o perfil dos idosos que cometeram suicídio. O meio físico (enforcamento) foi a principal estratégia utilizada, e o espaço privado (o domicílio) foi o local de escolha para cometer o ato.*

*Descritores: Mortalidade. Idoso. Suicídio.*

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*Objetivo: caracterizar el perfil del anciano víctima de suicidio e identificar los medios utilizados para cometer el acto. Método: estudio epidemiológico, descriptivo, en Instituto de Medicina Legal de referencia. Muestra constituida de 61 declaraciones de muerte por suicidio ocurridas entre 2007 y 2014. Para recolección, se utilizó el cuestionario. Datos tratados por medio de análisis estadístico descriptivo. Resultados: el perfil del anciano que cometió suicidio fue de hombres, con baja escolaridad, jubilados, casados y residentes en la capital del Estado. Domicilio y ahorcadura fueron locales y medio frecuentes. Conclusión: sexo, escolaridad, estado civil, situación laboral y área de vivienda fueron las principales variables que caracterizaron el perfil de ancianos que cometieron suicidio. El medio físico (ahorcamiento) fue la principal estrategia utilizada, y el espacio privado (domicilio) fue el lugar de elección para cometer el acto.*

*Descriptores: Mortalidad. Anciano. Suicidio.*

## Introduction

Population projections from the United Nations indicate that, by 2050, there may be around 2.1 billion elderly people worldwide. In Brazil, the proportion of elderly people could increase from 12% in 2015 to 29% in 2050. This process of sociodemographic transition requires public policies for tackling it[1].

Aging is a stage of human development that encompasses biological and psychosocial phenomena in the lives of elderly people. Physical limitations, sickness, self-perception of health and loss of independence can generate feelings of frustration, uselessness and loss of dignity, culminating in psychological suffering that undermines quality of life. Therefore, changes resulting from the aging process can be risk factors for suicidal behavior[2].

Suicide is an emerging public health problem, since 800,000 people die due to suicide every year around the world[3]. Brazil is among the top ten countries with the highest number of reported suicides: in the elderly population, the rates ranged from 6.8/100,000 inhabitants in 2000 to 8/100,000 inhabitants in 2007[4]. In the last decade, the Northeast had 72.4% growth in the suicide rate, the highest in relation to the other Brazilian regions[5].

The Ministry of Health, through Ordinance No. 1876, August 14, 2006, emphasizes the importance of comprehensive care, through health promotion, prevention, treatment and recovery, as well as identification of the determining factors of suicide and/or attempted suicide and the training of primary care professionals to provide them with adequate knowledge and the ability to manage the factors involved in suicide processes[6].

In this context, the growth of the elderly population makes it essential to recognize and prepare for personal and collective demands, related to the biological and socioeconomic aspects that come with aging. Therefore, it behooves health managers and professionals to recognize and explore the aspects connected to suicide in this group, so that they can be taken account in the definition of public policies and the provision of more resolution-based health care that is preventive in nature, with an emphasis on elderly people, from the perspective of comprehensive care, to ensure the quality of life of this population group.

The objective of this study was to characterize the profile of elderly suicide victims and the method used for committing suicide.

## Method

This is a retrospective, epidemiological study that is exploratory and descriptive by nature, with a quantitative approach, carried out in the Institute of Legal Medicine, located in the city of Teresina, and a point of reference for the state of Piauí, Brazil. For deaths that do not occur within a hospital context, death certificates are issued by the Institute of Legal Medicine, justifying the choice of the scenario.

The sample was obtained through access to the death certificates of elderly people where the

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cause of death was registered as suicide. Suicides were considered to be deaths by purposely self-inflicted injury (X60-X84, according to ICD-10). The instrument used for the data collection was a questionnaire designed by the researchers based on the information contained in the death certificates, the instrument for registering deaths in Brazil, in accordance with Law No. 6015/1973, which deals with public records[7].

The questionnaire was organized by ordinal numbers, with ten items divided into two blocks: the first, with variables corresponding to age group, sex, race/color, marital status, occupation and city of residence; the second block involved the variables related to the city and place where the death occurred and the method used for committing suicide.

The data was collected by the researchers during July and August, 2015, in a room set aside by the institution participating in the study, in order to maintain the confidentiality of the information. In accordance with the preestablished criteria, the death certificates of men and women, aged 60 years or over and who had committed suicide between 2007 and 2014, were included in the study. Death certificates with incomplete or illegible information were excluded.

A total of 61 death certificates corresponding to suicides by elderly people in the state of Piauí were included. The data was organized on an Excel for Windows spreadsheet, and was input twice. Afterwards, the data was processed with the Statistical Package for Social Science software (SPSS, Version 20.0). Descriptive statistics were used for the analysis, with the numerical data organized in absolute frequency and percentage distribution tables.

In accordance with Resolution No. 466, December 2012, of the National Health Council[8], the study only started after authorization from the co-participatory institution and approval of the project by a Research Ethics Committee (Opinion No. 1084760, on May 28, 2015, CAAE: 45191615.6.0000.5210).

**Results**

From 2007 to 2014, there were 79 deaths by suicide in the age group of 60 years or older in the state of Piauí. Of this total, 18 cases were simultaneously excluded due to incomplete information regarding race/color, marital status or level of education.

The 61 death certificates that composed the sample revealed that the incidence of suicide among elderly people in the state, within the time period under study, had grown since 2010. There was a rapid rise in self-inflicted deaths, which reached a peak in 2013, with 28% of the cases. In relation to the preceding years, 2014 had the lowest rate of reported suicides – 10% of the total number of cases (Graph 1).

**Graph 1 –** Incidence of suicide among elderly people. Piauí, Brazil – 2007-2014 (N=61)
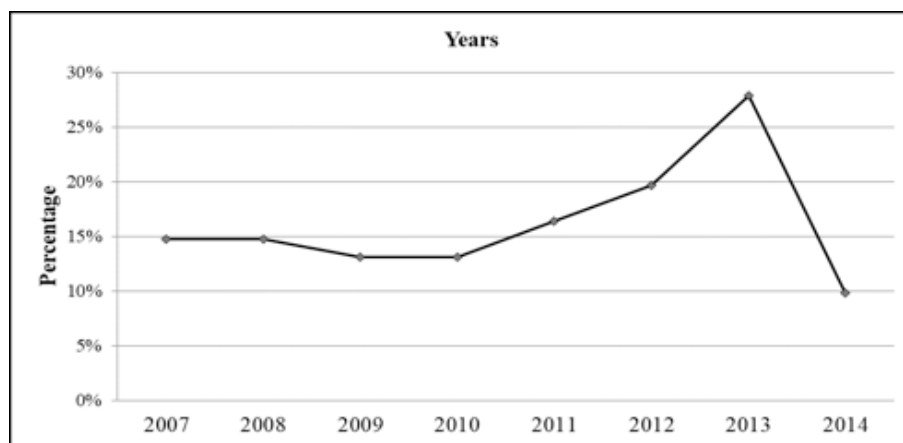


Source: Created by the authors.

The profile of elderly suicide victims in the state of Piauí corresponded to men (82%), age group of 60 to 70 years old, brown race/color (63.9%); married (65.6%); with 4 to 7 years of education; retired (42.6%); residing in the city of Teresina (65.6%) (Table 1).

**Table 1 –** Sociodemographic characteristics of death by suicide among elderly people. Piauí, Brazil – 2007-2014 (N=61)

| Variables | | n | % |
|---|---|---|---|
| **Age group** | 60 to 70 | 33 | 54.0 |
| | 71 to 80 | 21 | 34.5 |
| | Over 80 | 7 | 11.5 |
| **Sex** | Female | 11 | 18.0 |
| | Male | 50 | 82.0 |
| **Race/color** | White | 19 | 31.1 |
| | Black | 3 | 4.9 |
| | Yellow | 0 | 0 |
| | Brown | 39 | 63.9 |
| | Indigenous | 0 | 0 |
| **Marital Status** | Single | 2 | 3.3 |
| | Married | 40 | 65.6 |
| | Widow/widower | 13 | 21.3 |
| | Divorced | 5 | 8.2 |
| | Common law relationship | 1 | 1.6 |
| **Education** | None | 16 | 26.2 |
| (In years of study | 1 to 3 | 5 | 8.2 |
| completed) | 4 to 7 | 20 | 32.8 |
| | 8 to 11 | 11 | 18 |
| | 12 or more | 6 | 9.8 |
| | Not known | 3 | 4.9 |
| **Occupation** | Retired | 26 | 42.6 |
| | Laborer | 14 | 23.0 |
| | Merchant | 5 | 8.2 |
| | Homemaker | 4 | 6.6 |
| | Other | 12 | 19.7 |
| **City of residence** | Teresina | 40 | 65.6 |
| | Beneditinos | 2 | 3.3 |
| | São Miguel do Tapuio | 2 | 3.3 |
| | União | 2 | 3.3 |
| | Other | 15 | 24.6 |
| **Total** | | 61 | 100.00 |

Source: Created by the authors.

The highest frequency of death by suicide among elderly people in the state of Piauí occurred in the city of Teresina (70.5%); the home was the place of greatest incidence in relation to other locations, corresponding to 70.5%; and the method most used was hanging (78.7%) (Table 2).

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**Table 2 –** Distribution of deaths of elderly suicide victims, by city and place of occurrence and method used. Piauí, Brazil – 2007-2014 (N=61)

| Variables | | n | % |
|---|---|---|---|
| **City of occurrence** | Teresina | 43 | 70.5 |
| | São Miguel do Tapuio | 2 | 3.3 |
| | Altos | 1 | 1.6 |
| | Other | 15 | 24.6 |
| **Place of occurrence** | Home | 43 | 70.5 |
| | Hospital | 9 | 14.8 |
| | Rural zone | 3 | 4.9 |
| | Public road | 2 | 3.3 |
| | Other | 4 | 6.6 |
| **Method used** | Purposely self-inflicted injury by hanging | 48 | 78.7 |
| | Purposely self-inflicted injury by a firearm | 5 | 8.2 |
| | Self-intoxication by deliberate exposure to pesticides | 5 | 8.2 |
| | Purposely self-inflicted injury by drowning | 1 | 1.6 |
| | Purposely self-inflicted injury by smoke, fire, and flames | 2 | 3.3 |
| **Total** | | 61 | 100.00 |

Source: Created by the authors.

## Discussion

This study detected an increase in the suicide death rate from 2010 until reaching its peak in 2013, followed by a decline in 2014. This finding coincides with data in the literature, which shows that suicide in the elderly population has risen significantly in recent years[9]. Despite the decline noted in 2014, it is necessary to pay attention to the occurrence of this phenomenon.

There is a statistical convergence which illustrates a significant growth in the suicide rate among younger elderly people with a growth trend in the population between 70 and 80 years of age. This was also found to be the case in other studies conducted in states from the Northeast, particularly Piauí, Ceará, and Rio Grande do Norte[9]. Previous attempts are uncommon among elderly people since they plan and utilize lethal methods for committing suicide. However, it is essential to watch out for self-destructive behavior, self-neglect and behavioral and verbal indications of suicide ideation[10].

In relation to sex, it was noted that men commit suicide more, which may be related to the use of more lethal methods. Suicide is frequently associated with men in most countries, except for China, where the phenomenon is more common among women[11]. Sex, therefore, is a vulnerability factor, since masculinity is associated with the idea that men are autonomous beings, family providers, strong and virile, and do not express their feelings[11-12].

In reference to race/color, international studies have indicated a higher incidence among whites, with the exception of indigenous people, who manifest high risk in different situations. However, in this study, the prevalent race/color was brown and white, respectively. This finding is similar to those in other national studies, where brown men and white and brown women were in similar proportions[13-14].

Although marriage is cited in the literature as a protective factor, elderly married people were those who committed suicide the most. Other studies have found the same situation

identified in Brazil, followed by the incidence of widowed elderly people. Therefore, the need for surveillance, even among groups considered low-risk, must be emphasized[11,15]. The higher incidence of suicidal death among married elderly people may be related to socioeconomic factors, such as economic difficulties and unemployment, which lead to increased consumption of alcohol and other drugs, in addition to problems in family relationships and symptoms of depression, among others[16].

Socioeconomic issues, such as economic crises, unemployment, and decreased personal income, are important risk factors, especially for men[17]. The present study also noted the factors of low educational level and retirement. Elderly people with four to seven years of study or no education at all were, respectively, had higher suicide rates. The higher the level of education, the lower the likelihood of financial difficulties, since this influences economic stability and enables people to age with greater dignity[10,18].

In the sociocultural context, a person's value is related to one's productivity. Consequently, elderly people can be viewed as useless in certain situations. Inability to support one's family financially can cause feelings of sadness, anguish or alienation in the environment where the elderly person lives, sometimes due to lack of communication and a weak affective-personal relationship with the family. Elderly people tend to view themselves as a bother or nuisance, which can be exacerbated by loss of independence and becoming care-dependent in relation to basic needs[19].

In terms of the cities of residence and occurrence of the deaths, it stands out that suicides among elderly people in Brazil's Northeast region may be associated with the phenomenon of migration from rural to urban areas. This is because, in such moves, many people experience a degree of suffering due to ruptured social bonds, loss of culture and links, and difficulty adapting to the customs of urban life. These factors, among others, contribute to situations of vulnerability[20].

In the sociodemographic analysis of an Irish longitudinal study on aging and suicide ideation, there was a higher incidence in urban areas[18]. In the present study, suicides also took place in cities other than the ones where the elderly people resided. This discordance may be related to the fact that Teresina is more populous or because it is a reference city in health care within the state and attracts people from other cities.

In this study, deaths occurred more frequently in the home. Studies have pointed out that loss of people's social and family importance can result in isolation. In the household context, this can contribute to and even facilitate committing suicide, since caregivers may be away from home for work and other daily activities[19]. The second highest rate was found in hospitals. This may be related to the fact that these elderly people, despite receiving emergency care, had irreversible clinical conditions.

In reference to committing the act itself, the methods most used by the elderly people were: hanging, followed by firearms and exogenous poisoning/intoxication through the use of pesticides. Elderly people tend to use more aggressive and lethal methods, such as hanging and the use of firearms, especially among men in the case of the latter. Studies in other countries have shown that the most used method of suicide by both sexes was also hanging, strangulation and suffocation[21]. The present study corroborates the results of these international studies.

Ingestion of pesticides is a nonviolent method common in Brazilian rural areas[22]. National studies have reported that exogenous poisoning/intoxication is a method commonly used by women to commit suicide. Agricultural pesticides warrant special attention, as one of the most used methods of suicide and attempted suicide, in the case of the Northeast region or people living in rural environments. The use of pesticide may be associated with the frequent application of these products in agriculture in the region under study, since people are aware of its high toxicity and it is easy to obtain[10].

In Brazil, there is no database that reports the frequency and distribution of attempted suicides.

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This contributes to less awareness on the part of public health professionals and managers in relation to the impact of suicidal behavior[23]. It is crucial that health professionals understand and recognize the vulnerability of elderly people, receive training and help develop and improve public policies aimed at this audience.

Some of the strategies that can be used in suicide prevention are pesticide purchase/sale policies, implementation of effective disarmament policies, solidly-founded mental health policies, identification and early treatment, training of health professionals, monitoring and community support after attempted suicides[24].

The decline in the number of cases of suicide in 2014 may be related to local prevention, through social mobilization, health initiatives and media coverage of the topic. It is suggested to conduct future studies to attempt to make this association. Although suicide is surrounded by numerous taboos, the complexity of the issue should not prevent addressing it and, consequently, planning interventional strategies. Due to the statistical prevalence of elderly suicide victims, primary care professionals – as agents to promote health and prevent diseases and complications – need to be qualified to serve, identify and individualize the needs of this population.

One limitation of the study was incomplete data on the death certificates. This flaw demonstrates the need for more emphasis on the qualification of professionals and the implementation of strategies that reinforce that quality reporting is essential for providing reliable statistics. Technological investments in data storage systems could also ensure greater accuracy and safety.

## Conclusion

The primary characteristics of the profile of elderly suicide victims were: age group of 60 to 70 years old, male, brown race, married, low level of education, retired and urban residents. Suicide occurred predominantly in the person's own home and hanging was the most common method. Although there was a statistical decrease in suicides in 2014, this study found that the phenomenon has been on the rise in recent years in this population group.

It was noted in this study that the functional decline experienced by elderly people makes them vulnerable and modifies their way of relating to people and the world. This indicates the need to think in terms of new perspectives, as professionals, for planning the care of elderly people in biopsychosocial environments, with an emphasis on comprehensive care. It is necessary to reflect and formulate strategies aimed at promoting the mental health of elderly people in primary care with an interdisciplinary focus.

This study clearly confirmed the need to consider elderly people as a group that is susceptible to suicide by hanging themselves at home. It is imperative to invest in public policies, particularly in primary care, where professionals are in direct contact with this population, ensuring care and an emphasis on aspects related to mental health, access to therapeutic methods and training of professionals in light of this phenomenon. This would make it possible to identify elderly people at risk of suicide and adopt preventive methods, while also respecting their dignity and promoting their quality of life.

## Collaborations:

1. conception, design, analysis and interpretation of data: Adriana Vasconcelos Gomes, Prissilla Kalyne Bezerra Cardoso, Francisca Cecília Viana Rocha, Cláudia Maria Sousa de Carvalho and Magda Coeli Vitorino Sales;

2. writing of the article and relevant critical review of the intellectual content: Adriana Vasconcelos Gomes, Francisca Cecília Viana Rocha and Magda Coeli Vitorino Sales;

3. final approval of the version to be published: Adriana Vasconcelos Gomes, Prissilla Kalyne Bezerra Cardoso, Francisca Cecília Viana Rocha, Cláudia Maria Sousa de Carvalho and Magda Coeli Vitorino Sales.

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