

## Suicide In Cuba Over 60 Years Old 2015-2020

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### Abstract

**Introduction:** In the world every year, 700,000 people die by suicide. In the Americas, self-inflicted injury varies by region in 19.7% in North America and 7.8% in Central America. In Cuba, suicide is the tenth cause of death.

**Aim:** To characterize suicide mortality in Cuba in persons over 60 years of age 2015 - 2020.

**Method:** A retrospective descriptive study was performed. The universe was all the records of death by suicide over 60 years old (y.o.) in the mortality databases of the Ministry of Public Health (MINSAP) of Cuba, from 2015 to 2020. The variables studied were: sex, age, skin color, occupation, marital status, methods. Cumulative mortality rates were calculated, gross, adjusted, sex-specific, ages, per 100,000 inhabitants. The percentage was calculated according to the variables.

**Results.** There were 4282 deaths due to suicide, of which 79.9% were men. From 2015 to 2020, adjusted suicide rates increased by 6.6%. The group of cases with 80 y.o. and older had the highest adjusted rate of 53.9 per 100,000 inhabitants. The highest percentage occurred in the 60-69 age group (36.4%). According to marital status, those who did not have a stable partner predominated (49.3%), according to occupation, in retirees (55.3%). The method most used was hanging, with 80.0%.

**Conclusions:** Rates are lower among women and increase with age. The results contribute to the updating of the epidemiology of suicide in Cuba.

**Keywords:** Suicide, Mortality, Over 60 Years, Cuba

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## Introduction

Suicide or self-inflicted injury as referred to in the International Classification of Diseases (ICD 10), was defined as "an act deliberately initiated and performed by a person in full knowledge or anticipation of its fatal outcome" [1, 2].

This injury constitutes a serious public health problem that affects the quality and life expectancy of people, and is present in all cultures, in broad social contexts and in diverse times. It has great social importance because it has an impact not only on health, but also biologically, psychologically and socially, leaving a deep imprint on family members, neighbors, colleagues and society as a whole [3, 4].

Globally, more than 700,000 people lose their lives to suicide, regardless of their socio-economic context. Suicide is expected to be in the fourteenth place by 2030 for both men and women between the ages of 15 and 44 [5].

Around 65,000 people die annually by suicide in the Region of the Americas. Suicide accounted for 12.4 per cent of external causes of death in the Americas, varying by sub region, 19.5 per cent in North America and 7.9 per cent in South America [6].

Within the United Nations Sustainable Development Goals (SDGs) and the WHO Comprehensive Mental Health Action Plan 2013-2030, reducing the global suicide mortality rate by one third by 2030 is both an indicator and a target (the only one on mental health). The 13th General Programme of Work 2019-2023 of the WHO includes this same indicator with a decrease of 15% by 2023 [5].

In the document of the Regional Mental Health Strategies, PAHO declared that suicide prevention is one of the most important priorities and that suicide is one of the impact indicators to be evaluated in the Region of the Americas [7, 8].

In 2019, people aged 65 and over in the Region of the Americas totaled 116 million, which represents 12% of the total population of the Region [9]. In Cuba, 21.3% of people are 60 years old and older, at the present time, it is the second oldest country in Latin America, 1 in 4 Cubans will be 60 or older and half a million people will be over 80. In the country, suicide is the tenth cause of death in the general mortality table [10, 11].

## Aims

To characterize suicide mortality in those over 60 years of age, according to sociodemographic variables, in Cuba from 2015 to 2020.

## Methods

### Type of Study and Data Sources

A descriptive, retrospective study was conducted to characterize suicide mortality in people over 60 years of age in Cuba, from

2015 to 2020. The data sources were the suicide death records in the mortality databases of the Directorate of Medical and Statistical Records (DNE) of the Cuban Ministry of Public Health (MINSAP), from January 1, 2015 to December 31, 2020.

## Variables

The following variables were analyzed:

*Gender:* male, female.

*Age:*  $\geq 60$  years old. For some analyses, subdivisions of these groups were performed to describe how they contributed precisely to mortality, according to the variables studied. The group divided into 60-69 years, 70-79 years and  $\geq 80$  years.

*Skin color:* white, black, mixed, unknown.

*Marital status:* with stable partner, without stable partner, unknown.

*Occupation or employment status:* retired, pensioned, unemployed, housewife, other occupations: farmer and fisherman, skilled worker, service worker, scientific and intellectual, disabled, unskilled worker, manager, office worker, medium professional and technical, machinery operator, and unknown.

### Methods used for suicide

hanging, burning, poisoning, firearms, falling from height, use of sharp objects, throwing or standing in front of moving vehicles, drowning and others unspecified.

## Data Collection, Processing and Analysis

Granted authorization from the National Directorate of the Office of Medical Records and Health Statistics of MINSAP for the collection of information. Death certificates were the primary source of data collection. For the classification of mortality (intentionally self-inflicted injuries) used the codes of the International Classification of Diseases (ICD 10): X60-X84.1. Cumulative mortality rates by age groups were calculated for the whole study time. Sex and age groups calculated crude, adjusted and specific mortality rates. Mortality rates calculated per 100,000 inhabitants. The standardization of the rates made according to age groups and sex using the direct method, taking as standard the population of Cuba in 2012, and last census conducted. The relative change in the series was calculated and the percentages used to express the data of the variables sex, age, skin color, marital status, occupation, and methods used in suicide.

DNE decoders used the aforementioned variables. A database developed in Excel, processed in an automated manner to make the tables.

## Ethic

The anonymity of the deceased maintained during the collection of the necessary data, used only for the purposes of this research, whose realization approved by the ethics committee of the National Institute of Hygiene, Epidemiology and Microbiology.

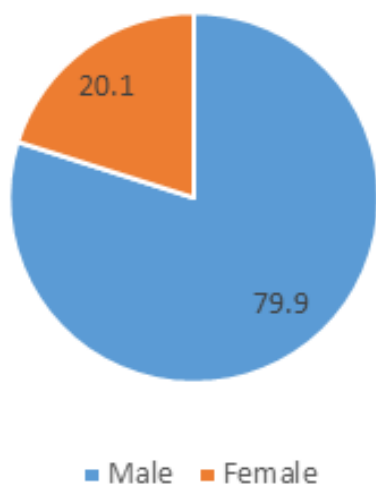
## Results

In the period 2015-2020, 4282 suicides were reported as having died by suicide in those over 60 years (856 suicides per year as an overall average), which represented an annual average gross rate of 31.8 per 100,000 inhabitants. (Table1). In 2015, the adjusted rate was 32.4 per 100,000 inhabitants and in 2020, it was 36.5, which represented an increase of 6.8%.

**Table 1: Cumulative suicide rates by sex and age groups ≥60 years old Cuba 2015- 2020**

Features	Cases	Crude deaths rate
Sex		
Males	3421	54,2
Females	861	12,0
Age groups		
60-69	1559	23,2
70-79	1505	33,7
80 and more	1218	53,2
Total	4282	31,8
Source: Directorate of Medical Records and Health Statistics MINSAP. Rates per 100,000 inhabitants		

According to sex, men contributed 79.9% of the total deaths and women 20.1 % (Figure 1).



**Figure 1: Percentage of mortality by sex. Cuba. 2015-2020**

Rates for males are rising. At the beginning of the series (2015), the adjusted mortality rate for men was 55.4 per 100,000 inhabitants; and rose to 60.8 in 2020 (relative increase was 9.8%). Among women, the rate was 11.7 per 100,000 inhabitants in 2015 and dropped to 11.0 in 2020, a relative decrease of 6.1%.

The deceased aged 60 and over had an adjusted average rate of 32.2 per 100,000 inhabitants throughout the period. In 2015, this group presented a rate of 32.4 per 100,000 inhabitants, and increased to 34.5 per 100,000 inhabitants in 2020. The relative increase was 6.8%.

The subgroup of 60 to 69 years of age had the highest percentage of the total number of deaths (36.4%) their cumulative adjusted rate for the whole period was 23.5 per 100,000 inhabitants. In 2015, it began with a rate of 22.9 and increased to 24.3 per 100,000 inhabitants for an increase of 6.2% relative change.

The 70-79 age groups had an adjusted cumulative rate for the entire period of 34.5 per 100,000 inhabitants and 35.2 per cent. In 2015, the adjusted rate was 33.7 per 100,000 inhabitants, and increased to 33.9 per 100,000 inhabitants in 2020, for a relative increase of 0.4% throughout the period.

The group of 80 years and older was the most at risk with an overall adjusted rate of 53.9 per 100,000 inhabitants and the lowest percentage with 28.4 per cent. In 2015, this group presented an adjusted rate of 57.9 per 100,000 inhabitants, which amounted to 65.9 per 100,000 inhabitants in 2020, with a relative increase of 14.0%.

Suicides accounted to 79.9 % among white people; 49.3 % in people without a stable partner and 55.3 % among retirees. The most commonly used method of suicide was hanging, which caused 80.0% of cases. This is the most commonly used method in both sexes. In men, the second method was poisoning with 2.1 % and in women burns, with 5.1 % (Table 2).

**Table 2: Mortality deaths reported by suicide according to selected variables. Cuba, 2015-2020**

Features	Sex					
	Males		Females		Total	
	No.	Percent	No.	Percent	No.	Percent
<b>Age</b>						
60 a 69	1192	27,8	367	8,6	1559	36,4
70 a 79	1203	28,1	302	7,1	1505	35,1
80 y +	1026	24,0	192	4,5	1218	28,4
<b>Skin color</b>						
White	2735	63,9	687	16,0	3422	79,9
Black	289	6,8	68	1,6	357	8,3
Mestizo	392	9,2	103	2,4	495	11,6
Ignored	4	0,1	3	0,1	7	0,2
<b>Marital status</b>						
Single	1700	39,7	413	9,6	2113	49,3
Steady	1487	34,7	366	8,5	1853	43,3
Ignored	234	5,5	82	1,9	316	7,4
<b>Occupation</b>						
Retirees	2097	49,0	269	6,3	2366	55,3
Not declared of working age	367	8,6	95	2,2	462	10,8
Housewives	0	0,0	407	9,5	407	9,5
Pensioners	289	6,8	62	1,4	351	8,2
Farmers/Fishermen	236	5,5	2	0,0	238	5,6
Unskilled workers	132	3,1	6	0,1	138	3,2
Others occupation	75	1,8	3	0,1	78	1,8
Unemployed	58	1,4	1	0,0	59	1,4
Others	59	1,4	1	0,0	60	1,4
Unskilled workers	33	0,8	2	0,0	35	0,8
Scientists/Professionals	17	0,4	7	0,2	24	0,6
Technicians	19	0,4	3	0,1	22	0,5
Skilled workers	20	0,5	0	0,0	20	0,5
Leaders	10	0,2	0	0,0	10	0,2
Disabled	6	0,1	1	0,0	7	0,2
Office employees	2	0,0	1	0,0	3	0,1
Students	0	0,0	1	0,0	1	0,0
<b>Methods</b>						
Hanging	3053	71,3	371	8,7	3424	80,0
Poisoning	89	2,1	198	4,6	287	6,7
Burn	62	1,4	219	5,1	281	6,6
Falling from height	70	1,6	49	1,1	119	2,8
Sharp objects	58	1,4	13	0,3	71	1,7
Gun shot	36	0,8	1	0,0	37	0,9
Drowning	28	0,7	5	0,1	33	0,8
Moving objects	15	0,4	3	0,1	18	0,4
With moving vehicles	4	0,1	0	0,0	4	0,1
Others	4	0,1	1	0,0	5	0,1
Aftermath	1	0,0	1	0,0	2	0,0
Total	3421	79,9	861	20,1	4282	100,0

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## Discussion

In Cuba, the male sex is the most affected, in line with other studies that report that suicide rates in men are higher than in women. Globally, in all age groups, men have higher suicide rates [12].

In our country, the group of 60 years and older is the most at risk of dying by suicide. A national research reported that the highest rates occurred in men over 60. In the 1990s, characterized by the worst economic crisis in Cuba after 1959, when the economic and social problems in the country in terms of food, transport, electricity, medicines, lack of recreation and other aspects of daily life worsened, which could have influenced this behavior [13, 14].

In this study, women presented lower rates and decreased in the period studied, in agreement with other studies. In other regions, China is the only country where women's suicide rates are much higher than men's [12].

According to global WHO figures, the highest suicide rates are found in the group of people aged 70 and over, in the Americas in most sub regions have the highest suicide mortality rate in the over-70 age group, especially in men [15].

In 2050, Cuba will be the oldest country in Latin America and the Caribbean, along with Barbados, and will be among the oldest in the world. The Cuban health system must get prepared to provide the care needed by the elderly population, because neglect of their needs has consequences for their health [13].

In Cuba, studies carried out in the elderly found as risk factors for suicide depression and anxiety, unmet needs, loss of loved ones, chronic diseases, social deprivation, family conflicts, the unfavorable economic situation, isolation and despair, among others [16].

In many cases, their income is low, they suffer abuse or unmet needs, they suffer from loss of their physical or cognitive capacity, or loss of family members, friends and the roles they previously played in life, and while some of these shortcomings can be avoided, others are inevitable [17].

A characteristic of the suicidal behavior among the elderly is that 86 % of those who suicide were not under psychiatric treatment. The elderly do not communicate their intentions of committing suicide; they barely out speak their feelings of hopelessness and do not seek help [18, 19].

Above all the mental disturbances depression is the one strongly related to suicide and especially among older people since 60 to 90 % of them trying to commit suicide are depressed. In general, patients with depression show four times more probabilities to commit successful suicide than those suffering any other psychological disturbance, 15 to 29 % of those suffering this mental condition commit suicide [18, 20].

In Cuba, studies performed among elderly found out that important risk factors for this group of persons are depression and anxiety, unmet needs, loss of love ones, lack of social support, family conflicts, unfavorable economy, isolation and hopelessness, among others [18, 19, 21].

The literature approaching the suicidal behavior in the elderly has described differential characteristics that separate them from other age groups such as less suicidal intents than the younger ones. Also the use of more lethal methods (hanging, precipitation, gunshot, toxic ingestion, carbon monoxide intoxication), more planning than impulsive acts, and finally, passive suicide behavior (clinophilial behavior, fasting, not following pharmacologic treatments, stopping contact with the family) [22, 23].

In terms of the occupation, the retirees or pensioners and homemakers were the more affected group coinciding with other investigations.

In terms of the occupation, the retirees, pensioners and homemakers were the more affected group coinciding with other investigations. This could be related with their low incomes, loss of their living status and other aspects related with age previously mentioned [13, 17, 18].

According to their civil status, those without a stable couple were the most affected. Other investigations found that the absence of a stable couple relationship or their loss, are factors associated to suicide [12, 13].

In the present study, the most extended method used in Cuba is hanging occupying the first place for both sexes for the studied years. Other researches in the country comply with our results. In the Americas' region, suffocation or hanging (39.7 %), gunshot (33.3 %), and poisoning (18.2 %) are the most frequently used methods. In Central America, the Hispanic Caribbean and Mexico (64.3 %) and in South America (58.2 %), suicides most frequently occur by hanging showing similar figures to ours [15, 16].

In Cuba, poisoning occupied the second place in 2015-2020, coinciding with the Americas' mortality report of suicide in the Hispanic Caribbean countries with 18.7 %. In the non-Hispanic Caribbean this method is the most common with 47.3 % reports, a higher proportion than in the present study [15]. According to sex, methods used show differential characteristics. Among females burns occupied the second most frequent method and among males, it was poisoning.

To limit the access to suicidal means is a universal approximation to this problem based on the evidence for suicide prevention. The method used will vary from a geographic zone to another and between different socio demographic groups, i.e. urban vs rural sector, age and sex, and may vary in time. The surveillance is necessary in order to detect the methods used by the general population or population subgroups as well as any new methods used [15, 23].



It has been proved that restriction to access to suicidal means not only reduces the suicidal related to this means but also reduces the general suicidal rates in some countries. Most of the people with a suicidal behavior experiment ambivalence about wanting to live or to die, and many suicides occur by impulse as an answer to stressing factors [12, 15].

The increase in life expectancy and the consequent increase in the economically dependent proportion of persons represent a challenge for the country's economic growth and for the health's systems that must attend the needs of an aged population [17].

The family and the society play a fundamental role in the satisfaction of the elderly needs; the understanding and protection that they can accomplish will definitively contribute to their benefits [17, 23].

Suicidal prevention cannot be engaged by the health sector only since risk factors associated to suicide and its prevention relate to many scopes of life. To achieve successful suicide prevention, it is essential to adopt a multidisciplinary approach because the society as a whole plays an essential role in this task [12, 15, 23].

## Conclusions

The suicidal rates increase with age and are lower among women. The results of this work may contribute to the updating of suicidal epidemiology in Cuba, since suicide is one of the main preventable causes of death for both sex and different age groups

## Recommendations

To perform further studies to identify the social determinants associated to suicide in Cuba, for its prevention.

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## Conflicts of interest

The authors declare that there are no conflicts of interest.

## References

1. Pan American Health Organization (PAHO). ICD-10 International Classification of Diseases. External causes of morbidity and mortality. Intentionally self-inflicted injuries. Chapter 20 (X60-X84) [Internet]. Washington (DC): PAHO; 2001 [cited 2021 Jun 2]. <http://ais.paho.org/classifications/Chapters/>
2. Cuba. National Information Center for Medical Sciences. National Medical Library. Suicide. Mortality and prevention. Factographic of Health [Internet]. 2015 Sept [cited 2021 Feb 2];1(10):[approx. 10 p.]. <http://www.sld.cu/noticia/2015/09/16/suicidio-mortalidad-y-prevencion-factografico-de-salud>
3. González Borges M, Silva Rojas M, Torres Martínez E. Suicide attempt in pediatric age, a current health problem. *Medimay* [Internet]. 2020 [cited: 10/11/21];27(3):288-98.
4. Tello-Rodríguez T, Alarcón RD, Vizcarra-Escobar D. Mental health in the elderly: major neurocognitive, affective and sleep disorders. *Rev Med Exp Salud Pública* [Internet]. Apr.-Jun. 2016 [cited 9 Dec. 2021];33(2).
5. Pan American Health Organization (PAHO). Live the life. Application guide for the prevention of suicide in the countries. Washington (DC): PAHO; 2021
6. Pan American Health Organization (PAHO). Prevention of suicidal behavior. Washington, DC: PAHO; 2016
7. World Health Organization (WHO). First WHO Report on Suicide Prevention. 2014 [Internet]. Washington (DC): PAHO 2014
8. World Health Organization (WHO). 53 Action Plan for Mental Health. Directing Council 66th Session of the WHO Regional Committee for the Americas. [Internet]. Washington, DC; WHO; 2014.
9. Pan American Health Organization (PAHO). Core Indicators 2019: Health Trends in the Americas [Internet]. Washington (DC): PAHO; 2019.
10. JJ Libre Rodríguez et al. Epidemiology, diagnosis and impact of dementia and other chronic noncommunicable diseases in Cuban older adults, 2002-2012. *Annals magazine of the Cuban Academy of Sciences* Vol.4 No.2 2014.
11. Cuban Ministry of Public Health. Directorate of Medical Records and Health Statistics. Health Statistics Yearbook 2020. Havana: MINSAP; 2020.
12. World Health Organization. Preventing suicide. A global imperative [Internet]. Luxembourg: World Health Organization; 2014
13. Corona B, Alfonso K, Hernández M, Lomba P. Epidemiology of suicide in Cuba, 1987-2014. *MEDICC* [Internet]. 2016;18(3).
14. Togores González V. Cuba: Social effects of the crisis and the economic adjustment of the 90's. *Cuba 20th century*
15. Pan American Health Organization. Mortalidad por suicidio en las Américas: informe regional. Washington, D.C.: Pan American Health Organization; 2014. p. 6-49.
16. Bethancourt Santana YC, Bethancourt Enríquez J, Moreno Rodríguez Y, Saavedra Díaz A. Determination of psychosocial factors that enhance suicidal behavior in older adults. *MEDICIEGO*
17. World Health Organization. World report on aging and health 2015 [Internet]. Washington, DC: World Health Organization; 2015
18. Molina Linares I, Mora Marcial G, Carvajal Herrera A, Marrero Salazar M, García Triana G. Risk factors associated with suicidal behavior in the elderly. *Medicentro Electronics* 2020;24(1):54-67.
19. Valiente Morejón W, Junco Sena B, Padrón Vega Y, Ramos Águila Y, Rodríguez Méndez A. Clinical-epidemiological characterization of suicide in older adults. *Rev Finlay*. 2018;8(2).
20. Gómez Restrepo C. Attempted suicide and Suicide in the elderly. *Colombian journal of psychiatry*. 2013;43(S1):80-4.
21. Corona Miranda B, Alfonso Sagué K, Cuellar Luna L, Hernández Sánchez M, Álvarez Toste M, García Pérez TC. Epidemi-

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- ological stratification of suicide mortality in Cuba, 2011-2016. Rev Haban Cienc Méd [Internet]. 2020;19(3):e2847.
22. Andrade Salazar JA, Lozano Sapuy LP, Rodríguez Romero A, Campos Ramírez JA. Biopsychosocial vulnerability and suicide in Colombian older adults. Rev Culture Care [internet]. Jan. 2016 [cited 9 Dec. 2021];13(1).
  23. Corona-Miranda B, Borrego-Calzadilla C, Berrouiguet S, Prado-Rodríguez R, Duany A. Suicide and its prevention. Magazine of the Psychiatric Hospital of Havana [Internet]. 2021 [cited 2022 Jan 25]; 16 (2).

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