

TIME TREND IN SUICIDE MORTALITY IN THE STATE OF BAHIA

Érica Assunção Carmo¹, Bárbara Santos Ribeiro¹, Adriana Alves Nery², Cezar Augusto Casotti³

ABSTRACT: Objective: To analyze the time trend in suicide mortality in the state of Bahia according to gender and age range, in the 1996-2013 period. **Methods:** A time series study based on data from Brazil's Mortality Information System (SIM), with trend analysis that uses Prais-Winsten regression. **Results:** Of the 5,393 people who died from suicide in Bahia, 81.4% (n = 4632) were men and 46% (n = 2619) were aged 20-39 years. As to the means used, 58.6% (n = 3336) of the deaths were due to intentional self-harm by hanging and strangulation, followed by self-poisoning by pesticides and chemicals (15.9% / n = 906). There was an increasing trend in the coefficient of mortality by suicide in the State for both genders and for the groups of 20 to 39 years, 40 to 59 years and 60 years or more. **Conclusion:** Suicide in Bahia predominates among young males, with an increasing trend of the total coefficient and in the different population groups.

DESCRIPTORS: Suicide; Mortality; Time series studies; Information systems; Ecological studies.

TENDÊNCIA TEMPORAL DA MORTALIDADE POR SUICÍDIO NO ESTADO DA BAHIA

RESUMO: Objetivo: Analisar a tendência temporal da mortalidade por suicídio no estado da Bahia, segundo sexo e faixa etária, no período de 1996 a 2013. **Métodos:** Estudo de série temporal realizado com dados do Sistema de Informação sobre Mortalidade, com análise de tendência por meio da regressão de *Prais-Winsten*. **Resultados:** Identificou-se 5.693 óbitos por suicídio na Bahia, destes 81,4% (n=4632) eram homens e 46% (n=2619) do grupo etário de 20 a 39 anos. Quanto ao meio utilizado 58,6% (n=3336) foram decorrentes de lesões autoprovocadas por enforcamento/estrangulamento, seguidas pela autointoxicação por pesticidas e por produtos químicos (15,9%/ n=906). Verificou-se tendência crescente para o coeficiente de mortalidade por suicídio no Estado, para ambos os sexos, e para os grupos etários de 20 a 39 anos, 40 a 59 anos e de 60 anos ou mais. **Conclusão:** O suicídio na Bahia predomina entre homens jovens, com tendência crescente para o coeficiente total e nos diferentes grupos populacionais.

DESCRIPTORIOS: Suicídio; Mortalidade; Estudos de séries temporais; Sistemas de informação; Estudos ecológicos.

TENDENCIA TEMPORAL DE LA MORTALIDAD POR SUICIDO EN EL ESTADO DE BAHÍA

RESUMEN: Objetivo: Analizar la tendencia temporal de la mortalidad por suicidio en el Estado de Bahía, según sexo y faja etaria, entre 1996 y 2013. **Métodos:** Estudio de serie temporal, realizado con datos del Sistema de Información sobre Mortalidad, con análisis de tendencia por regresión de *Prais-Winsten*. **Resultados:** Se identificaron 5.693 decesos por suicidio en Bahía; de ellos, 81,4% (n=4.632) correspondía a hombres y 46% (n=2.619) pertenecía al segmento etario de 20 a 39 años. Respecto al medio utilizado, 58,6% (n=3.336) derivaron de lesiones autoinfligidas, por ahorcamiento/estrangulamiento, seguidas por autointoxicación con pesticidas y productos químicos (15,9%/ n=906). Se verificó tendencia creciente del coeficiente de mortalidad por suicidio del Estado para ambos sexos y para segmentos etarios de 20 a 39 años, 40 a 59 años y 60 o más años. **Conclusión:** El suicidio en Bahía predomina entre hombres jóvenes, con tendencia creciente del coeficiente total y en diferentes grupos poblacionales.

DESCRIPTORIOS: Suicidio; Mortalidad; Estudios de series temporales; Sistemas de información; Estudios ecológicos.

¹Nurse. Master degree at the Postgraduate Program in Nursing and Health of Universidade Estadual do Sudoeste da Bahia. Jequié, BA, Brazil.

²Nurse. PhD in Public Health Nursing at Escola de Enfermagem de Ribeirão Preto of Universidade de São Paulo. Professor at Universidade Estadual do Sudoeste da Bahia. Jequié, BA, Brazil.

³Dental surgeon. PhD in Preventive and Social Dentistry at Universidade Estadual Paulista Júlio de Mesquita Filho. Full Professor at Universidade Estadual do Sudoeste da Bahia. Jequié, BA, Brazil.

Corresponding author:

Érica Assunção Carmo

Institution: Universidade Estadual do Sudoeste da Bahia

R. José Moreira Sobrinho, s/n - 45.206- 190, Jequié, BA, Brazil.

E-mail: eacarmo20@gmail.com

Received: 18/05/2017

Finalized: 01/12/2017

● INTRODUCTION

Suicide is a form of self-inflicted harm in which a human being intentionally causes his or her death⁽¹⁾. It is a complex phenomenon with multiple associated factors that vary according to the historical moment, social group, cultural, biological, psychological and environmental aspects, and which is considered taboo in many societies⁽²⁾.

Suicidal behavior ranges from suicidal thoughts to suicidal ideation or planning and obtaining the means for the final act of suicide. It is currently a world major public health issue ⁽¹⁾ due to the increased number of deaths by suicide in recent years. Thus, suicide has become one of the ten main causes of death in the worlds, the third most frequent among individuals aged 15- 34-years, and involves social, economic and personal impacts^(1,3).

From the economic point of view, suicide and its attempts represent a huge cost to society due to the investments needed to educate the individuals, the potential years of life lost due to early death, and the cost of hospital care ⁽⁴⁾. In Brazil, according to a survey published in 2007 deaths from suicide resulted in a total loss of approximately 1.3 billion, with an average loss of 163,000 per victim, ranking behind only deaths from homicides and traffic accidents with that averages of 189.5 thousand and 172 thousand, respectively⁽⁵⁾.

Regarding the coefficient of suicide mortality in Brazil, it was approximately 6.2 deaths per 100,000 inhabitants in the year ⁽⁶⁾, a figure considered low when compared to those from other countries such as France, China, Switzerland, Belgium, Austria, the United States and Eastern Europe ⁽⁷⁾. However, since it is a populous country, if the absolute number of deaths is considered, Brazil ranks ninth in the world⁽⁸⁾.

Considering the coefficient of suicide mortality at the regional level, 50% of the deaths occur in the Brazilian southern region, and the highest mortality rates for this group are concentrated in the south of the country⁽⁹⁾. However, an assessment of the evolution of suicide mortality rates showed that the Northeastern and Center-Western regions of Brazil had higher coefficients, respectively 130% and 68%⁽³⁾.

Therefore, although deaths by suicide are more frequent in the most developed areas of Brazil, there is a significant growth in the less developed regions such as the Northeastern region, particularly in the states of Ceará and Bahia. Together they account for more than 40% of the deaths by suicide in the region ⁽¹⁰⁾.

Given the scarcity of studies focused on suicide mortality in the state of Bahia, and in order to better understand the current situation in the state, as well as aspects related to its occurrence in different population groups, the present study aimed to analyze the time trend in suicide mortality in the state of Bahia according to gender and age range from 1996 to 2013.

● METHODS

Epidemiological time series study, with an ecological design, using secondary data related to suicide mortality in the state of Bahia, conducted from 1996 to 2013.

Data was obtained at the Mortality Information System (SIM), at the portal of the Department of Information Technology of the Brazilian Public Health System (DATASUS) of the Ministry of Health. The study period (1996-2013) was selected because it corresponds to the years covered by the current International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10), which classifies suicide as "external causes of morbidity and mortality" under the codes X60 to X84.

For the purposes of the study, the deaths considered were those caused by suicide among the population group aged ≥ 10 years and resident in the state of Bahia. Individuals younger than 10 years were excluded, since deaths due to suicide in this age group are rare, and when they occur, they are

difficult to characterize and are most often classified as accidental causes ⁽¹¹⁾. In this study, three suicide deaths were identified in children under 10 years of age, which were excluded from data analysis.

The variables analyzed in the study were gender (male, female); age group (10 to 19 years, 20 to 39 years, 40 to 59 years, and 60 years or more); and ICD-10 categories corresponding to suicide, grouped in this study as intentional self-poisoning by drugs and unspecified substances (X60-X64); intentional self-poisoning by alcohol (X65); intentional self-poisoning by pesticides and chemicals (X68-X69); intentional self-harm by hanging and strangulation (X70); intentional self-harm by drowning/submersion (X71); intentional self-harm by firearm discharge (X72-X74); intentional self-harm by smoke, fire, and gas (X75-X77); intentional self-inflicted injury by white weapon and blunt objects (X78-X79); intentional self-harm by jumping from a high place (X80); intentional self-inflicted injury through unspecified means (X84), and other intentional self-harm (X81-X83; X66-X67).

Coefficients of suicide mortality were calculated and stratified by gender and age group, corresponding to groups of 100,000 inhabitants. Demographic data, the basis for calculations of the coefficients, were made available by the Brazilian Institute of Geography and Statistics (IBGE), from the DATASUS website. The coefficients were standardized by age group through the direct method and using the population of the state of Bahia in the year 2010 as a standard. Standardization was considered necessary to obtain comparable coefficients throughout the study period.

The Prais-Winsten regression model was used for the analysis of the coefficient in time trend (in logarithm form) to correct the effects of serial autocorrelation over time. Based on the estimation of coefficients beta 1 (b1) obtained in regression analysis, the annual percent changes (APC) and the respective 95% confidence intervals (95% CI) were calculated according to the method proposed by Antunes and Cardoso ⁽¹²⁾. Trends were classified as increasing ($p \leq 0.05$ and positive regression coefficient), decreasing ($p \leq 0.05$ and negative regression coefficient) and stable ($p > 0.05$). The p values were obtained with the Wald Test.

Microsoft Office Excel 2010 software was used for tabulation, descriptive analysis, calculation of coefficients and construction of tables, and statistical SPSS (Statistical Package for the Social Sciences), version 21 was used for trend analysis.

The databases used in this study are publicly available for use in accordance with the ethical principles for medical research involving humans, established in Resolution 466 of December 12, 2012 of the National Health Council ⁽¹³⁾. Thus, submission to the Research Ethics Committee was not required.

● RESULTS

In the 1996-2013 period 5,693 suicide deaths involving individuals aged ≥ 10 years were recorded in the state of Bahia.

Table 1 - Deaths by suicide per ICD-10 categories, according to gender and age range. Bahia, Brazil, 1996 to 2013

ICD-10*	Gender**						Age Range**							
	Total		Male		Female		10-19		20-39		40-59		60 or more	
	N	%	N	%	n	%	n	%	n	%	n	%	n	%
Intentional self-poisoning by unspecified drugs and biological substances	144	2.5	83	1.8	61	5.8	19	4.7	72	2.7	45	2.5	8	0.9
Intentional self-poisoning by alcohol	20	0.4	15	0.3	05	0.5	-	-	10	0.4	07	0.4	03	0.4
Intentional self-poisoning by pesticides and chemicals	906	15.9	598	12.9	308	29.1	97	24	402	15.4	293	16,5	112	13.1
Intentional self-harm by hanging	3336	58.6	2901	62.6	433	40.9	198	49	1484	56.7	1077	60.5	552	64.3
Intentional self-harm by drowning/submersion	83	1.5	54	1.2	29	2.7	9	2.3	37	1.4	23	1.3	12	1.6
Intentional self-harm by firearm discharge	582	10.2	545	11.8	37	3.5	47	11.6	313	12	152	8.5	68	7.9
Self-harm by explosive devices	82	1.4	36	0.8	46	4.3	-	-	30	1.1	34	1.9	26	2.1
Intentional self-inflicted injury by white weapon and blunt objects	127	2.2	107	2.3	20	1.9	5	1.2	68	2.6	42	2.4	18	1.4
Intentional self-harm by jumping from a high place	160	2.8	101	2.2	59	5.6	13	3.2	78	3	40	2.2	14	3
Intentional self-inflicted injury through unspecified means	200	3.5	153	3.3	47	4.4	14	3.5	98	3.7	55	3.1	33	3.9
Other intentional self-harm	53	1	39	0.8	14	1.3	02	0,5	27	1	12	0.7	12	1.4
TOTAL	5693	100	4632	100	1059	100	404	100	2619	100	1780	100	858	100

Font Source: Ministry of Health. Department of Information Technology of SUS (DATASUS). Brazilian Mortality Information System (SIM).

* International Statistical Classification of Diseases and Related Health Problems-10th revision

** Ignored cases were excluded

NE: Not specified.

In Table 1, the deaths were distributed by ICD-10 category, according to gender and age group., as follows: 4,632 (81.4%) of men and 2,619 (46%) of individuals aged 20-39 years. As for the categories of ICD-10, a higher percentage of cases where the cause of death was intentional self-harm by hanging and strangulation was found both in the total analysis of the deaths and in the stratified analysis by gender and age group: 3,366 (58.6%) cases in total; 2,901 (62.6%) were men; 433 (40.9%) were women; 198 (49%) were aged 10-19 years; 1,484 (56.7%) were aged 20-39 years; 1,077 (60.5%) aged 40-59 years; and 552 (64.3%) aged 60 years or more; followed by self-poisoning by pesticides and chemicals: 906 (15.9%) cases in total; 598 (12.9%) men, 308 (29.1%) women; ; 97 (24%) aged 10- 19 years; 402 (15.4%) aged 20-39 years; 293 (16.5%) aged 40 -59 years; and 112 (13.1%) aged 60 or more.

Regarding the evolution of the coefficients of suicide mortality in Bahia, as shown in Figure 1 and Table 2, there was a growth in this coefficient (102.9%), which rose from 2.03 per 100,000 inhabitants, in 1996, to 4.12 per 100,000 inhabitants in 2013, an annual increase of 12.1% and an increasing trend for the analyzed period ($p < 0.001$) (Table 3).

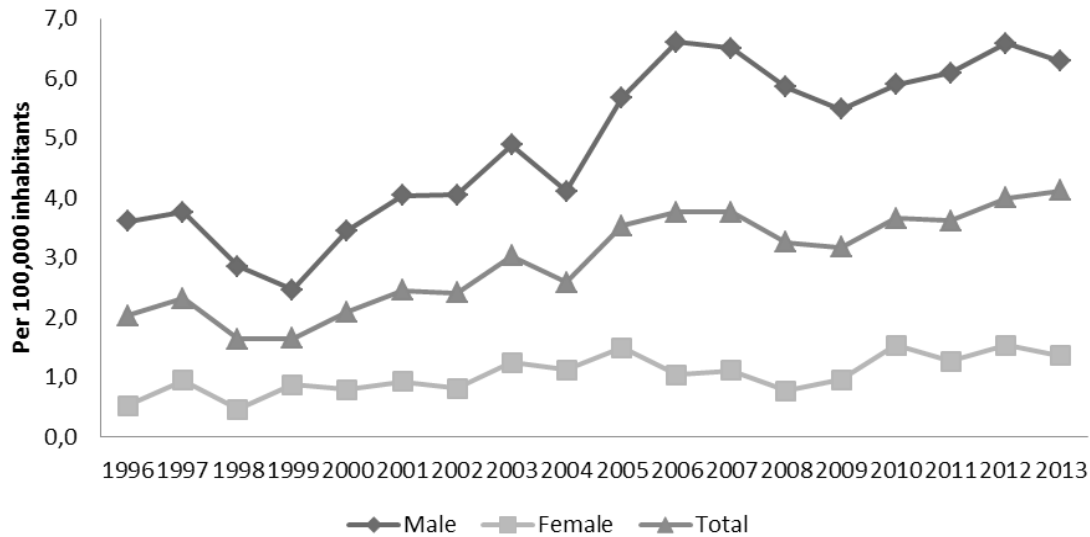


Figure 1- Evolution of the coefficients of mortality* by suicide, total and stratified by gender. Bahia, Brazil, 1996 to 2013

Source: MS/SVS/DATASUS/SIM; IBGE.

* Coefficient per 100,000 inhabitants standardized by the direct method by age group.

Table 2 – Evolution of the coefficient* of suicide mortality, total and stratified, according to gender and age range. Bahia, Brazil, 1996 to 2013

Variables	Year																		
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
Total	2.03	2.32	1.64	1.65	2.10	2.45	2.41	3.03	2.58	3.54	3.76	3.76	3.26	3.18	3.66	3.62	4	4.12	
Gender																			
Male	3.61	3.76	2.86	2.46	3.45	4.04	4.05	4.89	4.11	5.68	6.61	6.50	5.85	5.48	5.90	6.09	6.59	6.29	
Female	0.53	0.95	0.47	0.88	0.80	0.93	0.82	1.25	1.12	1.50	1.04	1.11	0.77	0.96	1.54	1.27	1.54	1.36	
Age group																			
10 to 19	0.54	0.44	0.53	0.46	0.65	0.74	0.89	0.69	0.75	0.77	0.58	1.01	0.63	1.02	1.20	0.93	1.11	0.07	
20 to 39	2.10	2.67	1.68	1.79	1.86	2.47	2.76	3.18	2.70	3.89	4.58	4.46	3.31	3.27	3.50	4.47	4.89	3.73	
40 to 59	3.18	2.68	2.24	2.22	3.22	3.88	3.12	4.68	3.83	4.73	5.17	4.46	4.77	4.40	4.82	4.38	4.94	5.22	
60 or more	2.23	3.89	2.40	2.27	3.34	2.76	2.65	3.81	3.06	5.15	4.05	5.04	4.78	4.36	4.34	3.91	4.51	6.83	

Source: MS/SVS/DATASUS/SIM; IBGE.

*Coefficient per 100,000 inhabitants using the direct standardization method by age group.

Likewise, there was an increasing trend for the coefficient of suicide mortality of men, which showed a percentage increase of 11.8% per year (95% CI: 5.9; 18), from 3.61 per 100,000 inhabitants, in 1996, to 6.29 per 100,000 inhabitants in 2013. Among women, a 9.8% annual percentage increase was observed, with a coefficient that increased from 0.53 per 100,000 inhabitants, in 1996, to 1.36 per 100,000 inhabitants in 2013, and an increasing trend in the assessed period (p = 0.002) (Figure 1 and Tables 2 and 3).

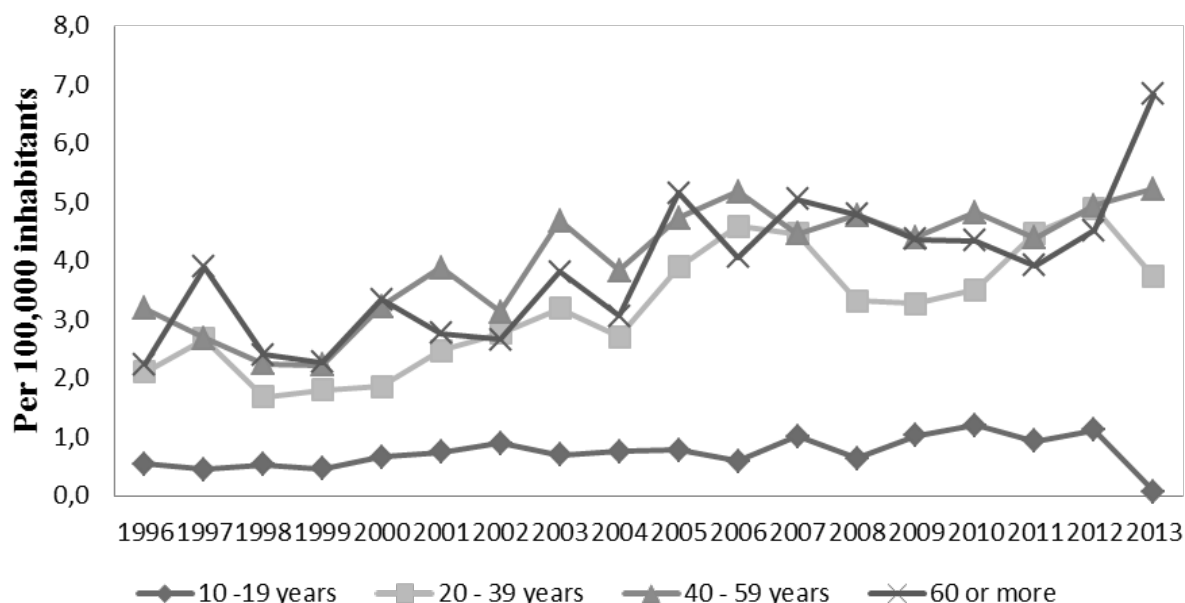


Figure 2 - Evolution of the coefficients* of suicide mortality, according to the age group. Bahia, Brazil, 1996 to 2013

Source: MS/SVS/DATASUS/SIM; IBGE.

*Coefficient per 100,000 inhabitants using the direct standardization method by age group.

Figure 2 and Table 2 describe the evolution of suicide mortality coefficients, according to the age group. There was an increasing trend for the 20-39 age groups (2.10 / 100.00 in 1996 and 3.73 / 100.000 in 2013), 40-59 years old (3.18 / 100,000 in 1996 and 5.22 / 100,000 in 1996) in 2013) and in those individuals aged 60 years or more (2.23 /100.000 in 1996 and 6.83 / 100.000 in 2013), with an annual percentage change of 11.8% (95% CI: 5.4, 18.7), 9.9% (95% CI: 5; 15) and 11% (95% CI: 6.9, 15.2), respectively. As for the 10-19 age group, it had the lowest suicide mortality coefficients, with a stable behavior throughout the study period (p = 0.729) (Table 3).

Table 3 - Result of the trend analysis of the coefficient of mortality by suicide in the state of Bahia, Brazil, 1996 to 2013

	APC _%	CI _{95%}	p-value*	Trend
Total	12.1	7.3; 17.1	<0.001	Increasing
Gender				
Male	1.8	5.9; 18	0.001	Increasing
Female	9.8	4.2; 15.6	0.002	Increasing
Age range				
10 to 19	2	-9.5; 14.9	0.729	Stable
20 to 39	11.8	5.4; 18.7	0,001	Increasing
40 to 59	9.9	5.0; 15	<0.001	Increasing
60 or above	11	6.9; 15.2	<0.001	Increasing

APC: Annual Percent Change.

CI_{95%}: Confidence Interval of 95%.

*Wald test obtained by Prais-Winsten regression.

● DISCUSSION

The results of this study point to the increasing trend of the coefficient of suicide mortality in Bahia, with an increase of 102.9% in the analyzed period and an annual change of 12.1%. It can be seen that the State shows a higher growth in this coefficient compared to the coefficient of suicide mortality of Brazil, from 2000 to 2012 (26.5%)⁽⁶⁾ and for the State of Espírito Santo, from 1980 to 2006 (24.4%)⁽¹⁴⁾.

In this regard, it should be noted that such growing trend may reflect not only the increase in the number of deaths by suicide, but also possible improvements in the completion of death certificates due to the better identification and determination of suicide as the cause of death.

Assessment of suicide mortality rates according to gender showed that suicides are more common among men in Bahia (81.4%), with an increasing trend in the mortality coefficient. These results are consistent with those reported for Brazil⁽⁶⁾, other states⁽¹⁴⁻¹⁶⁾ and Brazilian capitals⁽¹⁷⁻¹⁸⁾, as well as for other South American countries, such as Argentina⁽¹⁹⁾ and Chile⁽¹⁹⁾.

The gender disparity in death by suicide is generally explained by the fact that men are more aggressive, competitive and impulsive than women and have greater access to lethal technologies⁽¹⁴⁻¹⁵⁾. In addition, alcohol use and alcohol-related problems are another risk factor for suicide, which may also justify the higher percentage of suicides by men, as found in a survey in Santa Catarina, with an average of 80% of male heavy drinkers⁽¹⁶⁾.

Despite the lower frequency of deaths by suicide among women, the female gender showed an increasing trend in the coefficient of suicide mortality, which diverges from the results reported in other Brazilian states, such as Espírito Santo⁽¹⁴⁾ and São Paulo⁽¹⁵⁾, where the coefficients remained stable, and of Rio Grande do Sul⁽²⁰⁾, where there was a decreasing trend. A possible explanation for the trend found in Bahia would be associated to a deficient system that does not ensure the early identification of person individuals at risk of suicide, since several studies demonstrated that although complete suicides are more frequent among men, suicide attempts are more frequently undertaken by women^(4,16).

Concerning the distribution of deaths by age group, a higher percentage of deaths by suicide was observed among young adults (aged 20-39 years), followed by adults in the older age group (40-59 years), with an increasing trend in the coefficient of suicide mortality for both the groups. These results corroborate those reported in studies conducted in the states of Espírito Santo⁽¹⁴⁾ and São Paulo⁽¹⁵⁾, and in municipalities such as Belo Horizonte/MG⁽¹⁸⁾, Itabira/MG⁽¹⁸⁾ and Independência/CE⁽²¹⁾.

In addition, the death rates from suicides were considerably higher for individuals aged 60 years or more compared to other age groups in the State, with an increase of 11% per year in the coefficient and increasing trend in the analyzed period. These evolutionary characteristics differ from those found in Brazil between the years 2000 and 2012, when the increase in suicide mortality was higher among adults aged 25-59 years and among young people aged 10-24 years⁽⁶⁾, as well as for the state of São Paulo in the period from 1996 to 2009⁽¹⁵⁾, where there was a decline in deaths by suicide among the elderly. Nonetheless, a study showed that like Bahia, other states in the Northern and Northeastern regions showed an increasing trend in suicide mortality rates of people aged 60 years or more⁽²²⁾.

These differences and changes in the suicide mortality profile over time may be related to changes in the social behavior of the individuals, since the motives that induce the suicide act differ between the age groups⁽⁶⁾. For example, the reasons for committing suicide among young people are generally associated with breakup of romantic relationships, poorer academic performance and employment prospects⁽⁶⁾. As for adults and middle-aged individuals, work and family pressures are the most significant risk factors, especially among men⁽⁶⁾.

Among the elderly, suicide episodes may be related to difficulties in dealing with the aging process and its consequences, such as social isolation, death of a loved one (usually the spouse), terminal illness with uncontrollable pain, fear of life without dignity, as well as changes in their previous social roles and situations of physical/ mental dependence which may cause the elderly to feel humiliated⁽²³⁾.

Regarding the method of suicide employed, hanging and strangulation were the most frequently observed in this study, followed by self-poisoning by pesticides and chemical products, both in the total analysis of the deaths and in the stratified analysis by gender and age group. These methods are similar to those reported as the main causes of suicide in Brazil^(3,6) and in other states of the country^(16,20).

According to the literature, easy access to the selected method of suicide is an important risk factor for the occurrence of the event. Thus, strategies that make this access difficult, such as protective measures in drug bottles, greater control and inspection of the possession of firearms and the illegal commercialization of pesticides and other chemical products can help reduce suicide rates ⁽²⁴⁾.

Some methods, such as hanging and strangulation are difficult to control. In such cases, early identification of individuals at risk of suicide by health professionals and specialized services becomes crucial for the promotion of mental health care, as well as guidance on surveillance and identification of emergency preparedness to family members, friends or emotionally close persons, in order to prevent suicide attempts ⁽⁶⁾.

Regarding control and prevention of suicide in Brazil, it can be affirmed that the event is recognized as a public health problem, and some measures have been adopted by the Ministry of Health, such as the creation of the National Strategy for the Prevention of Suicide, through Ordinance no. 2542/2005 ⁽²⁵⁾, the establishment of National Guidelines for the Prevention of Suicide, to be implemented in all the Brazilian states, through Ordinance No. 1,876 / 2006 ⁽²⁶⁾ and the publication of the Suicide Prevention Manual for Mental Health Professional Teams ⁽²⁷⁾.

The public mental health policies that established the Psychosocial Care Centers (CAPS) as mental health reference centers are associated with the strategies of suicide prevention in Brazil. However, so far these services do not conduct actions targeted to suicide prevention ⁽⁶⁾.

Despite the advances in legislation on the subject, and recognition by the federal authorities of the magnitude of the problem, a specific program to promote preventive actions for suicide has not yet been implemented. Thus, ideally, investments should be made in the implementation of specialized services and the training of professionals capable of identifying individuals suffering from mental illness and at risk of suicide.

One limitation of this study is the use of data extracted from the SIM due to the possible occurrence of underreporting and/or failure in the completion of death certificates in the referred portal. Moreover, the possibility of underreporting of cases, which may be related to social stigma, legal reasons, social rejection of a person who attempted suicide for religious reasons, and also reluctance or inadequate completion by the medical professional that records death as "accidental death" or "indeterminate cause" ⁽²⁸⁾ may have underestimated the number of cases.

Despite these limitations, the SIM is a potential tool for time trend studies, since it contains official data, among other things, is responsible for redirecting actions and elaborating public policies.

● CONCLUSION

The present study showed an increasing trend in suicide mortality in Bahia, for both genders, as well as for the following age groups: 20-39 years, 40-59 years and 60 years or more.

These results demonstrate that it is essential to train health professionals to identify people at risk of suicide, so that in partnership with the mental health service network they develop suicide preventive measures that take into consideration local and regional particularities.

● REFERENCES

1. Krug EG, Dahlberg LL, Mercy JA, Zwi AB, Lozano R. World Report on Violence and Health. [Internet] Geneva: WHO; 2002 [acesso em 18 jan 2017]. Disponível: http://apps.who.int/iris/bitstream/10665/42495/1/9241545615_eng.pdf.
2. Ministério da Saúde (BR). Organização Pan-Americana da Saúde (OPAS/OMS). Secretária de Gestão Estratégica Participativa. Departamento de Monitoramento e Avaliação da Gestão do SUS. Temático Prevenção de Violência e Cultura da Paz III – Painel de indicadores do SUS nº 5. [Internet] Brasília: Ministério da Saúde/OPAS; 2008 [acesso em 20 de fev de 2017]. Disponível: http://bvsm.s.saude.gov.br/bvs/publicacoes/painel_indicadores_sus_n5_p1.pdf.

3. Lovisi GM, Santos AS, Legay L, Abelha L, Valencia E. Epidemiological analysis of suicide in Brazil from 1980 to 2006. *Rev. Bras. Psiquiatr.* [Internet] 2009;31(Suppl 2) [acesso em 23 abr 2017]. Disponível: <http://dx.doi.org/10.1590/S1516-44462009000600007>.
4. Souza VS, Alves MS, Silva LA, Lino DCSF, Nery AA, Casotti CA. Tentativas de suicídio e mortalidade por suicídio em um município no interior da Bahia. *Rev. Bras. Psiquiatr.* [Internet] 2011;60(4) [acesso em 07 jan 2017]. Disponível: <http://dx.doi.org/10.1590/S0047-20852011000400010>.
5. Cerqueira DRC, Carvalho AXY, Lobão WJA, Rodrigues RI. Ministério do Planejamento, Orçamento e Gestão. Instituto de Pesquisa Econômica Aplicada (IPEA). Análise dos custos e consequências da violência no Brasil. Texto para Discussão nº 1284. [Internet] Brasília: IPEA; 2007 [acesso em 3 mar 2017]. Disponível: http://www.ipea.gov.br/portal/images/stories/PDFs/TDs/td_1284.pdf.
6. Machado DB, dos Santos DN. Suicídio no Brasil, de 2000 a 2012. *J. Bras. Psiquiatr.* [Internet] 2015;64(1) [acesso em 07 jan 2017]. Disponível: <http://dx.doi.org/10.1590/0047-2085000000056>.
7. Varnik P, Sisask M, Varnik A, Arensman E, Van Audenhove C, Van der Feltz-Cornelis C, et al. Validity of suicide statistics in Europe in relation to undetermined deaths: Developing the 2–20 benchmark. *Inj prev.* [Internet] 2012;18(5) [acesso em 07 jan 2017]. Disponível: <http://dx.doi.org/10.1136/injuryprev-2011-040070>.
8. Associação Brasileira de Psiquiatria (ABP). Comportamento suicida: conhecer para prevenir. Dirigido para profissionais de imprensa. [Internet] São Paulo: ABP Editora; 2009 [acesso em 21 jun 2017]. Disponível: http://www.cvv.org.br/downloads/cartilha_suicidio_profissionais_imprensa.pdf.
9. Organização Mundial de Saúde (OMS). Departamento de saúde mental. Transtornos mentais e comportamentais. Prevenção do suicídio: um manual para médicos clínicos gerais. [Internet] Genebra: OMS; 2000 [acesso em 14 mar 2017]. Disponível: http://apps.who.int/iris/bitstream/10665/67165/7/WHO_MNH_MBD_00.1_por.pdf.
10. Ministério da Saúde (BR). Departamento de Informação do SUS (DATASUS). Informações de saúde. Óbitos por causas externas – Brasil. [Internet] 2002 a 2012 [acesso em 14 nov 2016]. Disponível: <http://tabnet.datasus.gov.br/cgi/tabcgi.exe?sim/cnv/ext10uf.def>.
11. Monteiro RA, Bahia CA, Paiva EA, de Sá NNB, Minayo MCS. Hospitalizações relacionadas a lesões autoprovocadas intencionalmente – Brasil, 2002 a 2013. *Ciênc. saúde coletiva.* [Internet] 2015;20(3) [acesso em 20 jan 2017]. Disponível: <http://dx.doi.org/10.1590/1413-81232015203.16282014>.
12. Antunes JLF, Cardoso MRA. Uso da análise de séries temporais em estudos epidemiológicos. *Epidemiol. Serv. Saúde.* [Internet] 2015;24(3) [acesso em 20 jun 2017]. Disponível: <http://dx.doi.org/10.5123/S1679-49742015000300024>.
13. Ministério da Saúde (BR). Conselho Nacional de Saúde. Diretrizes e normas regulamentadoras de pesquisa envolvendo seres humanos. Resolução n. 466, de 12 de dezembro de 2012. Brasília; 2012.
14. Macente LB, Zandonade E. Estudo da série histórica de mortalidade por suicídio no Espírito Santo (de 1980 a 2006). *J. Bras. Psiquiatr.* [Internet] 2011;60(3) [acesso em 19 jun 2017]. Disponível: <http://dx.doi.org/10.1590/S0047-20852011000300001>.
15. Bando DH, Brunoni AR, Fernandes TG, Benseñor IM, Lotufo PA. Suicide rates and trends in São Paulo, Brazil, according to gender, age and demographic aspects: a joinpoint regression analysis. *Rev. Bras. Psiquiatr.* [Internet] 2012;34(3) [acesso em 21 jun 2017]. Disponível: <http://dx.doi.org/10.1016/j.rbp.2012.02.001>.
16. Sehnem SB, Palosqui V. Características epidemiológicas do suicídio no estado de Santa Catarina. *Fractal, Rev. Psicol.* [Internet] 2014;26(2) [acesso em 20 mar 2017]. Disponível: <http://dx.doi.org/10.1590/1984-0292/624>.
17. Schnitmana G, Kitaoka EG, Arouca GSS, Lira ALS, Nogueira D, Duarte MB. Taxa de mortalidade por suicídio e indicadores socioeconômicos nas capitais brasileiras. *Rev. Baiana Saúde Pública.* [Internet] 2010;34(1) [acesso em 13 fev 2017]. Disponível: <http://rbps.sesab.ba.gov.br/index.php/rbps/article/view/12>.
18. de Souza ER, Minayo MCS, Cavalcante FG. O impacto do suicídio sobre a morbimortalidade da população de Itabira. *Ciênc. saúde coletiva.* [Internet] 2007;11(Suppl 0) [acesso em 20 jun 2017]. Disponível: <http://dx.doi.org/10.1590/S1413-81232006000500022>.

19. Quinlan-Davidson M, Sanhueza A, Espinosa I, Escamilla-Cejudo JA, Maddaleno M. Suicide Among Young People in the Americas. *Journal of Adolescent Health*. [Internet] 2014;54(3) [acesso em 21 jun 2017]. Disponível: <https://doi.org/10.1016/j.jadohealth.2013.07.012>.
20. Meneghel SN, Victora CG, Faria NMX, de Carvalho LA, Falk JW. Epidemiological aspects of suicide in Rio Grande do Sul, Brazil. *Rev. Saúde Pública*. [Internet] 2004;38(6) [acesso em 21 jun de 2017]. Disponível: <http://dx.doi.org/10.1590/S0034-89102004000600008>.
21. Pordeus AMJ, Cavalcanti LPG, Vieira LJS, Coriolano LS, Osório MM, de Ponte MSR, *et al.* Tentativas e óbitos por suicídio no município de Independência, Ceará, Brasil. *Ciênc saúde coletiva*. [Internet] 2009;14(5) [acesso em 22 jun 2017]. Disponível: <http://dx.doi.org/10.1590/S1413-81232009000500014>.
22. Pinto LW, Pires TO, da Silva CMFP, de Assis SG. Suicide mortality trends in people aged 60 years or more in the Brazilian states: 1980 to 2009. *Ciênc. saúde coletiva*. [Internet] 2012;17(8) [acesso em 17 abr 2017]. Disponível: <http://dx.doi.org/10.1590/S1413-81232012000800008>.
23. Minayo MCS, Cavalcante FG. Suicide in elderly people: a literature review. *Rev. Saúde Pública*. [Internet] 2010;44(4) [acesso em 09 mar 2017]. Disponível: <http://dx.doi.org/10.1590/S0034-89102010000400020>.
24. Santos AS, Legay LF, Lovisi GM. Substâncias tóxicas e tentativas e suicídios: considerações sobre acesso e medidas restritivas. *Cad. saúde colet*. [Internet] 2013;21(1) [acesso em 02 abr 2017]. Disponível: <http://dx.doi.org/10.1590/S1414-462X2013000100009>.
25. Ministério da Saúde (BR). Portaria n. 2.542/GM de 22 de dezembro de 2005. Institui Grupo de Trabalho com o objetivo de elaborar e implantar a Estratégia Nacional de Prevenção ao Suicídio. *Diário Oficial da União*, [Internet] 22 dez 2005 [acesso em 21 jun 2017]. Disponível: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2005/prt2542_22_12_2005.html.
26. Ministério da Saúde (BR). Portaria n. 1.876 de 14 de agosto de 2006. Dispõe sobre as Diretrizes Nacionais para a Prevenção do Suicídio. *Diário Oficial da União*, [Internet] 14 ago 2006 [acesso em 21 jun 2017]. Disponível: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2006/prt1876_14_08_2006.html.
27. Ministério da Saúde (BR). Organização Pan-Americana da Saúde (OPAS/OMS). Universidade Estadual de Campinas (UNICAMP). Prevenção do Suicídio: manual dirigido a profissionais das equipes de saúde mental. [Internet] Brasília: Ministério da Saúde/OPAS/OMS/UNICAMP; 2006 [acesso em 21 jun 2017]. Disponível: http://www.cvv.org.br/downloads/manual_prevencao_suicidio_profissionais_saude.pdf.
28. Volpe FM, Corrêa H, Barrero SP. Epidemiologia do suicídio. In: Correa H, Barrero SP, organizadores. *Suicídio: uma morte evitável*. São Paulo: Atheneu; 2006. p.10-27.