Psychological and psychosocial autopsies of elderly people who died as a result of suicide in Brazil

Autópsias psicológicas e psicossociais de idosos que morreram por suicídio no Brasil

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Abstract ***The authors analyze 51 cases of suicide among the elderly from ten Brazilian municipalities. The objective is to understand the interaction of variables associated with suicide among the elderly. A bibliographic review gives theoretical support to this study. Based on psychological autopsy, the study begins with a semi-structured interview format, which was applied and analyzed by peer researchers, using the same procedure for gathering, organizing and analyzing the data. This material was reviewed using a psychosocial and qualitative meta-analysis approach based on family interview data, researchers' interpretations, socio-anthropological contextualization and relevance categories. Ways of committing suicide, reasons for suicide, associated factors, attributed motives and lethality were studied by sex, age and socioeconomic characteristics. The interaction of major precipitant factors was analyzed. The conclusions showed that there are convergences among epidemiological and qualitative studies. Severe illness, disabilities and mental disorders are the major causes, followed by depression and family and marital conflicts. Close attention to the quality of life of the elderly is recommended, especially of men who constitute the main suicide risk group.***

Key words ***Suicide, The elderly, Psychological autopsy, Psychosocial autopsy***

Resumo ***Analisam-se 51 casos de suicídio de idosos em dez municípios brasileiros, visando a conhecer a interação de variáveis associadas ao fenômeno. Uma revisão sobre o tema dá suporte teórico ao estudo. Tendo como base o método da autópsia psicológica, o estudo parte de um roteiro de entrevista semiestruturada, aplicada e analisada por pares de pesquisadores, mediante um mesmo procedimento de coleta, organização e análise dos dados. O conjunto foi reexaminado através de uma meta-análise de enfoque psicossocial e qualitativo sobre dados dos familiares entrevistados, interpretações dos pesquisadores, contextualização socioantropológica e categorias de relevância. Foram estudadas formas de perpetração e letalidade por sexo, faixa etária, perfil socioeconômico; fatores associados; e motivos atribuídos. Analisou-se a interação de fatores precipitantes relevantes. As conclusões apontam convergências entre estudos epidemiológicos e qualitativos. Doenças graves, deficiências e transtornos mentais juntos formam as principais causas, seguidas de depressão, conflitos familiares e conjugais. Recomenda-se atenção à qualidade de vida dos idosos, especialmente dos homens, que constituem o grupo de maior risco para suicídio.***

Palavras-chave ***Suicídio, Idosos, Autópsia psicológica, Autópsia psicossocial***

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Introduction

This article presents an analysis of 51 suicide cases among elderly individuals developed from a psychosocial perspective. It is the result of a multicenter[1] study conducted in ten Brazilian municipalities. The method we used is known as "psychological autopsy" and includes a semi-structured[2,3] interview guide adapted to the population older than 60 and submitted to a standardization, systematization and validation process by a group of researchers[4,5]. The article is also based on an extensive bibliographical review about the topic from 1980 to 2012, based on descriptors "suicide and elderly", "suicide and older people", performed on Medline, PsychINFO, SciELO and Bireme databases.

Psychological autopsy is a method created by Edwin Shneidman[6,7] and has become widespread in the last forty years[8]. It was conceived as a means to help forensic pathologists clarify the nature of deaths regarded as unresolved and that could be associated with natural or accidental causes, suicide or homicide. The method was also used to investigate the reasons behind self-inflicted deaths and to provide comfort to family members of individuals who have died this way. In ***Autopsy of a Suicidal Mind***[9], Shneidman worked for months on end on a single autopsy. He listened to parents, brothers/sisters, ex-wife, girlfriend, psychotherapist and psychiatrist to understand the reason that led a philosophy student to end his own life. The interviews he transcribed were shared with suicide specialists so they could coordinate their points of view on the event and reach a conclusion as to whether the event could have been prevented or not. At the end, Shneidman offered eighteen different hypotheses to explain the death or intention of the suicidal act.

Shneidman chose not to use a set interview guide[10,11]; he suggested guiding categories, which are described in Werlang and Botega's study[8]. In harmony with this author who created the scientific subject called suicidology, the ***psychosocial autopsy***[4,5] method was organized. It aims to understand emotional, social, economic and cultural reasons and circumstances associated with suicide among elderly individuals. The goal of the study was to investigate and analyze the relevance of interacting variables.

Suicide rates vary between nations according to age, sex, race and ethnicity. Those rates are higher in Eastern Europe, average in the United States, Western Europe and Asia and lower in Central America and South America. In most countries men have higher rates than women, ranging from 3:1 to 7.5:1[12]. Two exceptions are China and India, where rates for men and women are similar. In China suicide risk for older age groups (men older than 70 and women older than 75) is 100/100,000[13]. In the United States there is an average of 10.8/100,000 deaths by suicide in the overall population. However, white men have a suicide rate of 23.9/100,000 in the age group 65 to 69 and 49.7/100,000 in the age group older than 85[12,14].

In Brazil suicide rates are low when compared to those in many countries. In 2008[15] the average was 5.8/100,000 for the overall population and 9/100,000 for the elderly population. This shows that older individuals are at greater risk. It was noted that this increase in Brazil was caused by suicide among men, ranging from 8.7/100,000 and 15.4/100,000 among men younger or older than sixty, while rates for women are low, ranging from 2.4/100,000 to 2.6/100,000. The means used to commit suicide in the country[15] from 1980 to 2006 are hanging (51.7% to 56.2%), firearms (13.4% to 16.6%) and poisoning (4.8% to 7.5%). Fall from heights (1.7% to 2.8%) and partial burning by flames (2.6%) are among the most unusual ways.

There are an estimated 600 million elderly people aged 60 or older worldwide and it is believed that in 2020 this population will reach a billion people[16]. In Brazil, the elderly population aged 60 or older is estimated to grow by 59.3%, from 8.1% in 2000 to 12.9% in 2020[17]. This represents an increase by 14 million in 20 years, an average of 700 thousand new elderly individuals every year[18]. Since suicide risk tends to increase with age, prevention becomes a challenge for social and healthcare sectors.

Elderly individuals who attempt suicide are more likely not to be found or to get timely help, since many in that age group live alone - even though in our study all individuals had some kind of support or relationship with their families. In addition, they use more lethal means than younger people and this is why their attempts are usually fatal[19,20]. Older elderly individuals (older than 80) express more easily their suicidal thoughts than younger elderly individuals (65-80 years old)[20,21], and data from the United States show that 75% of elderly individuals who committed suicide had never attempted it before[19]. Among elderly individuals there are approximately two to four attempts for every completed suicide[21,22], or shall we say, the presence of suicidal ideations or attempts, increases the risk of self-inflicted death[23-25].

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Most of what is known about risk factors and protective factors associated with suicide comes from psychological autopsies[19,26], with the following diagnostic distribution: affective disorders (54%-90%) and substance use disorders (3%-46%). There is an association between alcohol and suicide, but not suicide and dementia, except for the initial stages where there is greater awareness of cognitive and functional changes[20,21].

Material and Method

Our goal was to perform at least fifty psychosocial autopsies with relatives of elderly individuals who had died by suicide in ten municipalities across Brazil's five regions with high rates of suicide. They were chosen based on an epidemiological study about the historical development of this phenomenon at national, regional and local levels[27].

Choice of Municipalities and Teams: Based on a descriptive and evolutionary analysis of suicide among the elderly[27], we chose to study municipalities which had rates higher than 10/100,000, greater proportions of elderly individuals and different population standards. Other criteria also helped to choose these study locations: proximity to universities and experienced collaborating researchers, training in public health or mental health and inclusion in a university. The following were chosen: Manaus (Amazonas), in the North; Fortaleza and Tauá (Ceará) and Teresina (Piauí), in the Northeast; Campo Grande and Dourados (Mato Grosso do Sul), in the Middle West; Campos (Rio de Janeiro), in the Southeast and Venâncio Aires, Candelária and São Lourenço (Rio Grande do Sul), in the South.

Selected Sample and Research Sources: We selected 51 cases of elderly individuals aged 60 or older who died within two to five years. At least five autopsies were performed in each location. The following sources were used: official databases about mortality, expert reports, deaths recorded by civil registries, hospital records and information provided by National Health System SUS professionals. Family members and neighbors were located by mail, phone calls, scheduled visits with or without support provided by Family Health Strategy (FHS) professionals[5]. Contact with families only progressed after the consent form approved by Fiocruz's ethics committee had been signed.

Team Training: In the first seminar we established parameters for data collection and organization, with detailed instructions[4]. We trained five area coordinators representing five regions across the country using a manual that standardized guidelines and provided a foundation for research work. The study was led in each municipality by a senior researcher and a team with doctoral and master's degrees, degree and non-degree graduate students and undergraduate students. We proposed a theoretical alignment[21, 28] and local training involving reading, role-playing and a pilot study.

Data Collection: The main qualitative tool for data collection was a semi-structured interview guide, with a personal identification form of the individual who committed suicide and of interviewee(s), and a simplified genogram model to contextualize how the family was organized.

The Interview Guide[4] included: seven questions about social characteristics; eighteen questions about the profile and way of life of the individual who committed suicide; seven questions to describe the suicide and the accompanying environment; six questions about the elderly individual's mental state before the final act; and five questions about the family's image before, during and after the suicide, totaling 43 simple or multiple-item questions. Interviews were carried out by pairs of researchers and lasted from one to two hours[5]. Each municipality was also contextualized in socio-anthropological terms. Autopsies were systematized into a standard format that included common[4] research categories.

Data Analysis: The field group and coordinators shared their results at a workshop where the studies were grouped by case and location into a pre-analysis format. Adjustments were made and strategies were defined for final analysis. Psychological autopsies were analyzed in depth, case by case, by pairs of researchers and later submitted to examination by investigative coordinators. This approach took into account interviewee's reports, researcher interpretations and contextualization data to establish categories of relevance. The local analysis mirrored a thematic organization similar to that of the tools. The final analysis consisted of a "meta-analysis" understood here as a new way to organize quantitative or qualitative information that gathers and expands results and conclusions of other researchers. It also reanalyzed data as a whole and studied information according to sex, age group and perpetration methods; socioeconomic profile; risk and protective factors, attributed reasons for suicide, lethality of used methods. Finally, we placed interaction among the most relevant triggering fac-

tors. We also adopted a comparative approach between regions, municipalities and cases.

The psychological autopsy allowed analyzing different levels of disturbance in which an individual can become an enemy of their own self, as Shneidman[9] puts it. By using this method that joins historical, sociological and psychiatric dimensions into a ***psychosocial analysis***, we aimed to integrate three perspectives: (1) Bertaux's[29] psychosociological view according to which a biography reflects life in society in all its wealth and contradictions; (2) Durkheim's[30] classic conception that defines suicide as a social event in which economic and cultural contexts become present in the frequency of the event; (3) the review made by Lester & Thomas[31] about suicide research in the last fifty years and that recommends analyzing in detail social relationships of people who commit suicide and observing interactional styles. In response to the current trend of favoring standardized surveys and distant variables, the authors say[31]: ***research is poor, there is a lack of theories and new issues are not put forward***. Therefore, this analysis shows the tension between psychological and social factors when developing a qualitative description of suicide among elderly individuals. Results presented here obviously cannot be generalized.

Advantages and Limitations of the Method and Strategies: Training provided to researchers responsible for surveys across ten municipalities and, locally, to several people who took part in the study aimed to standardize tools, organize data and build categories, making it easier to establish a common language to understand the phenomenon. The team's clinical experience, the presence of two senior researchers during data collection and analysis, and accounts provided by one or several family members or caretakers in each case all contributed to making information reliable and consistent. The limitations of the method[8] are initially associated with the fact that one is working with an issue that requires researchers to be emotionally balanced and controlled; with study time being reduced to one or two interviews per family; and with the difficulty of addressing conflicting accounts[4]. We aimed to minimize such limitations through conversations shared in a communication network, following Shneidman's[9] example.

Results

A Brief Contextualization of Studied Locations: Manaus is the seventh largest city by population in Brazil and has the sixth highest GDP. It is in the middle of the largest tropical forest in the world, in the state of Amazonas. From the rubber industry to the tax free zone, where international products are sold, Manaus currently stands out as an industrial center. Fortaleza, the capital of Ceará, is the fifth largest city by population and has the fifteenth highest GPD in the country. Its economy revolves around tourism, trade and shoemaking, textile and food industries. Tauá is five times smaller than Fortaleza in terms of population and is known as "The Little Princess of Inhamuns" and the land of red clay because it is in the semiarid region in the Northeast. Its economy is based on farming, cattle raising and trade. Tourism in Archeological and Paleontological Sites stands out. Teresina was the first planned city in the country. Its environmental parks and tree-filled squares make it known as the "green city". Two intertwining rivers, the Parnaíba and Poti, run across it. It is the capital of the state of Piauí and its main highlights are the tourist spot Encontro das Águas, its folklore and handicraft. Campo Grande is the capital of Mato Grosso do Sul and it is the twenty-second largest city in Brazil by population and the third most developed urban center in the Middle Western region. There has been strong internal migration to this city and also of people from Spanish, Italian, Portuguese, Japanese, Syria-Lebanon, Armenian, Paraguayan Bolivian descent. Its economy is based on trade and civil construction. Dourados, also in Mato Grosso do Sul, is a place with strong tradition from Terena, Kaiwá and Guarani Indian tribes and its fertile land has been attracting businessmen and farmers from Rio Grande do Sul. Campos do Goytacazes is one of the largest municipalities in the state of Rio de Janeiro. It has strong farming and cattle-raising tradition, sugar cane farming and a large rural population. Its name comes from the Indian terms Goitacás, Guarulhos and Puris. Campos is currently an important oil and natural gas production center. Venâncio Aires, Candelária and São Lourenço, in Rio Grande do Sul, are all municipalities colonized by the German and their main activities are tobacco farming and diversified agricultural production. Venâncio Aires is the largest tobacco producer in the country while Candelária - the smallest municipality in the study by population - and São Lourenço are tourism and agricultural centers. The last two municipalities

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were colonized by German immigrants from Pomerania, a region devastated by World War II. In those municipalities families and elderly individuals live in significant isolation.

Case Profiles

We interviewed 84 people in all ten listed municipalities: 62 women, 22 men, the youngest was 18 and the oldest 76. Most interlocutors were relatives (94%), children, grandchildren, brothers/sisters, wives and ex-wives, daughters-in-law, sons-in-law and nephews, in addition to neighbors. Most interlocutors were children (45.2%), wives and ex-wives (17.8%). A few ex-wives had taken the place of caretakers for the deceased until the end of their lives. In 40% of interviews it was possible to talk to two to five family members. Such extended interviews occurred in all municipalities, with one, two or three sessions in each locality, except for Venâncio Aires where only the youngest child was interviewed; according to the local culture this child has the duty of caring for their parents when they grow old. Most interlocutors took care of elderly individuals directly or indirectly and had contact with them on a daily basis.

We studied cases of people aged sixty or older, 40 of which were men and 11 were women. Most men (55%) were in the group aged 60-69, followed by those aged 70-79 (25%) and 80+ (20%). Among women most were aged 70-75 (45.3%), 60-69 (36.5%) and only two were older than 80. We studied suicide cases among men across all five regions in the country: five in the North (12.5%), fourteen in the Northeast (35%), seven in the Middle West (17.5%), four in the Southeast (10%) and ten in the South (25%); and among women: five in the South (45.4%), three in the Middle West (27.3%), two in the Northeast and one in the Southeast.

With respect to age group and sex distribution by region, Table 1 shows that the North and Northeast had more accounts of suicide among younger men aged 60-69 (80% of cases in the North and 78.6% in the Northeast). In the Southeast we studied cases involving older people, aged 75-84. As for the Middle West and the South, they showed a distribution of men and women of different age groups, between 60 and 84 years old. In both regions there was a case involving a male individual older than 85.

Hanging was the preferred method both among men (65%) and women (72.7%), followed by firearms (20%) and poisoning (10%) among men. Among less popular methods, one man died after stabbing himself in the chest and another chose drowning; two women died by fire and one by fall from a height. Results are consistent with most recent epidemiological studies about suicide in the country[15]. This distribution of all 51 cases is shown in Table 2. The diversity of perpetration methods used by younger elderly men aged 60-64 (10 cases) and 65-79 (four cases) stands out in the municipalities of Teresina, Fortaleza and Tauá, in the Northeast. This region has the highest percentage of firearm usage (62.5% when compared with the rest) and poisoning (75% of overall total poisonings).

Consistent with data from literature[15], the predominant location for suicides was the home – bedroom, bathroom, balcony, front yard, backyard, garage – chosen by 72.4% of men and 63.6% of women. Almost all outdoor cases occurred in municipalities in the South, in Venâncio Aires, Candelária and São Lourenço, in warehouses, outside storage buildings and barns.

Table 1. Distribution of the Number and Proportion of 51 Suicides Among Elderly Individuals, by Age Group and Sex Across All Five Regions in the Country.

Age Group	North				Northeast				Middle West				Southeast				South				Total (n=51)	
	M		F		M		F		M		F		M		F		M		F		M	F
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	N
60 to 64 y.o.a.	3	60,0	-	-	10	71,5	1	50,0	3	42,8	1	33,3	-		-	-	3	30,0	1	20,0	19	3
65 to 69 y.o.a.	1	20,0	-	-	1	7,1	-	-	-		1	33,3	-		-	-	1	10,0	1	20,0	3	2
70 to 74 y.o.a.	-	-	-	-	1	7,1	-	-	1	14,3	-	-	-		-	-	2	20,0	2	40,0	4	2
75 to 79 y.o.a.	-	-	-	-	2	14,3	1	50,0	1	14,3	1	33,3	3	75,0	-	-	-	-	-	-	6	2
80 to 84 y.o.a.	1	20,0	-	-	-	-	-	-	1	14,3	-	-	1	25,0	1	100	3	30,0	1	20,0	6	2
> 85 y.o.a.	-	-	-	-	-	-	-	-	1	14,3	-	-	-	-	-	-	1	10,0	-	-	2	-
Total	5	100	-	-	14	100	1	100	7	100	3	100	4	100	1	100	10	100	5	100	40	11

Socioeconomic Profile

An overview of the social and economic profile of men and women studied is shown in Tables 3 and 4, with respect to marital status, level of education, religion, lifestyle, occupation and type of contract of so-called active or inactive workers. Occupation names followed the Brazilian Occupation Classification (CBO) of the Ministry of Employment Labor[32]. A few occupations were grouped in similar categories.

The first contrast between men and women appears as differences in marital status. While most men were married or remarried and a minority was widowers, divorced or separated (32.5%), nearly all women did not have a part-

Table 2. Distribution of Methods Used by 51 Elderly Individuals Studied by Sex Across All Five Regions in the Country.

Method	North				Northeast				Middle West				Southeast				South				Total (n=51)	
	M		F		M		F		M		F		M		F		M		F		M	F
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	N
Hanging	4	80,0	-	-	6	42,9	-		5	71,4	3	100	2	50,0	-		9	90,0	5	100	26	8
Firearms	1	20,0	-	-	5	35,7	-		1	14,3	-	-	-	-	-		1	10,0	-	-	8	-
Poisoning	-	-	-	-	3	21,4	-		-	-	-	-	1	25,0	-		-	-	-	-	4	-
Chest Stabbing	-	-	-	-	-	-	-		1	14,3	-	-	-	-	-		-	-	-	-	1	-
Fall from height	-	-	-	-	-	-	1	50,0	-	-	-	-	-	-	-		-	-	-	-	-	1
Carbonizing	-	-	-	-	-	-	1	50,0	-	-	-	-	-	-	1	100	-	-	-	-	-	2
Drowning	-	-	-	-	-	-	-	-	-	-	-	-	1	25,0	-	-	-	-	-	-	1	-
Total	5	100			14	100	2	100	7	100	3	100	4	100	1	100	10	100	5	100	40	11

Table 3. Distribution of Elderly Individuals by Marital Status, Level of Education, Religion and Lifestyle Across Five Regions in the Country.

	North		Northeast		Middle West		Southeast		South		Total (n=51)			
	M	F	M	F	M	F	M	F	M	F	M		F	
	N	N	N	N	N	N	N	N	N	N	N	%	N	%
Marital status														
Single	-	-	-	-	-	-	-	-	-	-	-	-	1	9,1
(Re)married or Steady Partner	1	-	11	-	7	1	3	-	5	-	27	67,5	1	9,1
Divorced or Separated	3	-	3	-	-	-	-	1	1	1	7	17,5	2	18,2
Widow(er)	1	-	-	-	-	2	1	-	4	4	6	15,0	7	63,6
Subtotal	5	-	14	-	7	3	4	1	10	5	40	100	11	100
Level of Education														
Illiterate or Semi-Illiterate	-	-	4	-	-	-	1	-	4	4	9	22,5	4	36,3
Literate	-	-	1	-	-	1	-	-	1	-	2	5,0	1	9,1
Primary Education	-	-	1	-	-	-	-	1	2	1	3	7,5	2	18,2
Elementary Education	4	-	6	-	3	2	1	-	2	-	16	40,0	2	18,2
High School or Technical	1	-	2	-	-	-	1	-	-	-	4	10,0	1	9,1
Higher Education	-	-	-	-	1	-	-	-	-	-	1	2,5	1	9,1
Not Informed	-	-	-	-	3	-	1	-	1	-	5	12,5	-	-
Subtotal	5	-	14	-	7	3	4	1	10	5	40	100	11	100
Religion														
Catholic	4	-	10	-	2	-	1	1	4	3	21	52,5	6	54,5
Evangelical	-	-	1	-	1	2	-	-	3	1	5	12,5	3	27,3
Spiritism	-	-	1	-	-	-	-	-	-	-	1	2,5	-	-
None	1	-	-	-	4	1	-	-	-	-	5	12,5	1	9,1
Not Informed	-	-	2	-	-	-	3	-	3	1	8	20,0	1	9,1
Subtotal	5	-	14	-	7	3	4	1	10	5	40	100	11	100
Lifestyle														
Rural Environment	-	-	5	-	-	-	-	-	10	5	15	37,5	5	45,5
Urban Environment	5	-	9	-	7	3	4	1	-	-	25	62,5	6	54,5
Subtotal	5	-	14	-	7	3	4	1	10	5	40	100	11	100

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Table 4. Distribution of Elderly Individuals According to Occupation and Employment Contract Across Five Regions in the Country

	North		Northeast		Middle West		Southeast		South		Total (n=51)			
	M	F	M	F	M	F	M	F	M	F	M		F	
	N	N	N	N	N	N	N	N	N	N	N	%	N	%
Occupation														
Housewife	-	-	-	-	-	3	-	1	-	-	-	-	4	36,4
Member of a Religious Order	-	-	-	-	1	-	-	-	-	-	1	2,3	-	-
Farmer	1	-	3	-	1	-	-	-	10	5	15	34,0	5	45,4
Service Provider	2	-	5	-	3	-	1	-	3	-	14	31,8	-	-
Technician	-	-	1	1	-	-	-	-	-	-	1	2,3	1	9,1
Company Employee	-	-	-	-	-	-	3	-	-	-	3	6,8	-	-
Self-Employed	-	-	-	1	1	-	-	-	-	-	1	2,3	1	9,1
Runs His/Her Own Business	2	-	4	-	1	-	-	-	2	-	9	20,5	-	-
Subtotal	5	-	14	2	7	3	4	1	15	5	44	100	11	100
Active or inactive														
Informal	-	-	2	-	-	-	-	-	-	-	2	5,0	-	-
Self-Employed	3	-	5	-	3	-	-	-	2	-	13	32,5	-	-
Retired	2	-	6	2	2	3	4	-	8	5	22	55,0	10	91,0
No Employment Contract	-	-	1	-	2	-	-	1	-	-	3	7,5	1	9,0
Subtotal	5	-	14	2	7	3	4	1	10	5	40	100	11	100

ner, either because they were widows, divorced, separated or single (90.9%). In the Northeast, Middle West and Southeast there were more married men or those with a steady partner; in the North there were more separated men or widowers; and in the South half of them were married and the other half were widowers.

Although half of the men had finished elementary school or at least started it, and some men had achieved technical education (50%), some had only finished primary school (7.5%), were illiterate or semi-illiterate (22.5%) or there was no information about level of education (12.5%). Most women had a low level of education (63.6%) and a small minority finished primary education (18.2%). Only one elderly man and one elderly woman had finished higher education.

The South and Northeast regions reported nearly all were illiterate men and women (twelve). In the Northeast illiterate individuals lived in Tauá, a rural municipality. Better levels of education were found among elderly individuals who died by suicide in urban centers of Manaus, Fortaleza, Teresina and Dourados.

Men and women are both mostly Catholic (53%), followed by Evangelicals (15.7%) and a minority, especially men, did not have any religion (12.5%). 20% of reports provided no information about religion. It is clear in this study that religious support was not very effective for individuals and their families, including 68.0% of men and 81.5% of women.

Elderly women who died by suicide were housewives or farmers. Only two built a professional career at technician (statistics) or higher education levels (dentist) (Table 4). As for men three occupations stand out: farmer (34%); service provider: carpenter, bricklayer, metal worker, upholsterer, driver, waiter and forwarding agent (31.8%); and runs their own business (20.5%): trader, businessman, rural producer, farmer, restaurant owner, market owner and store owner. There were also cases of elderly men who had had technical (electronics), higher education (engineering) and religious occupations, such as pastor. Three of them had been civil servants.

Nearly all women were retired or received pension from their spouses. More than half of the men were retired (55%) and 32.5% still had active employment contracts, since they were young elderly individuals (60-69 years old). A few retired individuals still had jobs; others were unable to retire and a minority of them was involved in informal activities or was jobless.

Associated Factors

Table 5 identifies risk factors for men and women. Although this table provides details about a range of items, analysis gathers them under categories according to affinity. We found

six major associated factors: financial overburden; abuse and discredit; death and illness of relatives; disability, physical conditions and mental disorders; social isolation and depressive traits; ideations, attempts and suicide in the family.

The most common factor among men (32.1%) and women (31.7%) was social isolation: when an introspective individual shows depressive traits, with or without confusion, with or without anxiety and agitation. Among men the second most common risk factor (19.5%) was illnesses or disabilities that lead to incapacity, interrupt work or limit one's functional capacity. Suicidal ideations rank third (17.3%). In some cases they appear with attempts or experience of other self-inflicted deaths in the family. Physical and verbal abuse ranks fourth (13.7%), together with family discredit and tumultuous and secret extramarital relationships. The last factors are associated with loneliness and lack of support some individuals experience in the end of their lives. Factors number five and six are related to death or illness of relatives (8.9%) and the impact of financial overburden (6.3%), in the form or personal debt or that of family members.

Among women the second most important associated factor was ideations and previous attempts and suicide cases in the family (27.4%). Next are diseases and disabilities such as incapacitating physical or mental disorders (15.2%) and impact of death or illness in the family (15.1%). The two least common elements were abuse and discredit suffered from gender violence or a husband's extramarital relationship (6.0%) and personal or family debt (4.5%).

According to accounts from family members, associated protective factors that are relevant when preventing suicide among elderly individuals are support from family and friends (48.3% for men and 38.9% for women) involving emotional bonds, social support and social and leisure meetings. The importance of financial stability for men was emphasized (26.7%) at a moment when they reap what they sowed throughout their entire lives, above all and considering the dominant patriarchal view and the tradition-

Table 5. Distribution of Suicide Among the Elderly, According to Risk and Protective Factors Associated with Suicide by Sex in All Five Regions in the Country.

	North		Northeast		Middle West		Southeast		South		Total (n=51)			
	M	F	M	F	M	F	M	F	M	F	M		F	
	N	N	N	N	N	N	N	N	N	N	N	%	N	%
Risk Factors														
Material Decline	2	-	1	-	1	-	-	-	1	-	5	2,6	-	-
Financial overburden	-	-	4	3	-	-	2	-	1	-	7	3,7	3	4,5
Abuse and Fragile Bonds	2	-	9	-	2	-	-	-	5	3	18	9,5	3	4,5
Extramarital Relationships	1	-	4	-	2	1	-	-	1	-	8	4,2	1	1,5
Death and Illness of Relatives	5	-	5	-	1	3	2	2	4	5	17	8,9	10	15,1
Disability	1	-	3	-	1	-	2	-	4	1	11	5,8	1	1,5
Incapacitating Disability	2	-	3	-	-	-	-	-	2	-	7	3,7	-	-
Chronic or Terminal Disease	1	-	3	1	2	2	3	-	5	3	14	7,5	6	9,2
Mental Disorder	2	-	1	1	-	2	1	-	1	-	5	2,6	3	4,5
Depressive	3	-	4	1	6	5	3	1	5	2	21	11,1	9	13,6
Isolated	8	-	11	1	8	5	3	-	6	3	36	18,9	9	13,6
Anxious	3	-	-	-	-	2	-	-	1	1	4	2,1	3	4,5
Suicidal Ideations	3	-	6	1	1	2	2	1	5	4	17	8,9	7	10,6
Suicide Attempts	1	-	2	2	3	2	2	-	1	2	9	4,7	6	9,2
Suicide in the Family	-	-	3	-	1	1	-	1	3	3	7	3,7	5	7,6
Homicidal Ideations	1	-	1	-	-	-	-	-	2	-	4	2,1	-	-
Total	35	-	60	10	28	25	20	4	47	27	190	100	66	100
Protective Factors														
Financial Stability	1	-	8	1	-	-	2	-	5	-	16	26,7	1	5,6
Healthcare Support	1	-	2	3	2	4	2	-	2	1	9	15,0	8	44,4
Religious Support	-	-	3	-	1	2	1	-	1	-	6	10,0	2	11,1
Support from Family and Friends	4	-	9	-	3	4	4	-	9	3	29	48,3	7	38,9
Total	6	-	22	4	6	10	9	-	17	4	60	100	18	100

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al role of breadwinners. Among women, people mentioned the importance of seeking healthcare support (44.3%), including medical or psychiatric care. Many interlocutors drew attention to the fact that elderly men take less care of themselves and see doctors less often, even though as a group they are at greater risk of suicide.

Symbolic Cases Among the Studied Sample

Six cases illustrate suicide within the biographical context. The first one tells the story of a 61-year-old man, a respected worker in the community, who had overcome a rare tumor in his childhood and who was in his third marriage. Claiming he was unlucky with women, he got involved in a conjugal plot filled with violence and humiliation. The last wife vilified and provoked him publicly, she had fits of jealousy and made difficult demands which sparked his hatred. He stabbed her to death and poisoned himself next. From a respectable man he started being remembered as a monster and his family was discriminated against. Here there was the woman's violence opposing that of traditional male origin, provoking in that elderly man's destructive and self-destructive wrath.

Two cases of 61-year-old men are contrasted below. After leading a peaceful life as an automobile dealer and a first marriage during which he was seen as a good father, the first of such men had a turbulent second marriage. He and his second wife were arrested for drug trafficking and doubts were raised about the paternity of one of his children. During the four years he spent in prison he was abused and humiliated. When he left he did not cope well with prejudice, social discrimination and visible financial decline. That man turned his death into a ritual. He left the clothes he wanted to be buried in; he telephoned his two families to inform them of his intention of committing suicide and left a note that said: ***he's done.*** While lying over a white towel he stabbed himself twice on the chest. Another elderly man of the same age built an estate that made his family comfortable. However, his standard of living was affected by his retirement. He got involved with enormous debt incurred by his daughter and was affected by his wife's indifference, who demanded he provide the same standard of living they enjoyed before and discredited him. When he told her he would kill himself she responded: ***you're a coward, you don't have the guts to kill yourself.*** This elderly man shot himself in the mouth before his wife and daughter. What those two cases have in common, in addition to other elements, is financial difficulties and a lower standard of living, a scenario that contextualizes the motives of two "individuals in debt and socially discriminated against".

Below we summarize two cases of women who died by fire. The first one is a 72-year-old woman with a hearing impairment, single, with a history of overcoming difficulties; she had achieved independence through education and had held a position as civil servant and later achieved stable retirement. Losing her parents triggered in this woman ideations and recurring suicide attempts, and an early Alzheimer's that limited her capacity. Both her family and psychiatric support were unable to prevent her from taking her own life. After several frustrated attempts, she poured solvent all over her body, lit a match and set herself on fire inside the bathroom. At age 82 another elderly woman had a history of suffering from domestic violence; her story was marked by silence, unsaid things and traumatic and tragic events. Her husband killed a worker in his farm and became a fugitive; her daughter was left paraplegic after her husband shot her and killed himself afterward; a son of hers died after drowning in the city river and the other had mental disorders. This woman was known for her peacefulness: ***she was always smiling, she never surrendered***, said her sister. Her suicide using solvent and setting her body in flames was how she spoke. People who were watching her were surprised to see that when she was suffering the most from burn injuries this woman did not moan or scream, not even when her body was touched for medical care. She revealed on the outside how she felt inside: her skin was raw. In both cases there are distinct social marks: in the first, the pain of not functioning in a society that tends to exclude those with disabilities. In the second, permanent silence under so much pain triggered in that elderly woman, who apparently accepted it all, the boiling flames of her suffering.

Finally, we present the case of a 92-year-old elderly man, a farmer of German descent, semiliterate, a widower, evangelical, who was looked after by his youngest son and who lived within the limits of a body and mind that would no longer cooperate. He did not have a retirement pension and depended on his son to feed himself and to perform daily activities. His son said: ***he felt his life was meaningless, he had no job, there was no companionship***. He hanged himself in a warehouse in his property, taking advantage of a

small oversight in care provided by his son and daughter-in-law.

Discussion

Life is like an hourglass. You know when sand passes from one bulb to the other? So this is time in our lives and as we grow old we have two choices: - we can let time slip away until it's over or we can turn the hourglass upside down and make sand start pouring all over again. We are the ones who choose whether our lives end at old age, so I prefer to enjoy it to its fullest before I run out of sand[33].

The hourglass metaphor reminds us that: ***we are the ones who choose whether our lives end at old age***[33]. Kamkhagi[34] distinguishes two life times during the ageing period: the time from 60 to 85, a stage that is still full of activity; and another from 85 onward, a stage where physical and global restrictions may affect quality of life. For that author the old age can be both a time of achievement and it can also build into a story of frustrations, marked by psychic defenses that lead an elderly individual to live in isolation or to run away from life.

Here one contemplates the option of death, discussing the multiple factors that cause suicide among the elderly through a hierarchy of variables under two perspectives: ***by saturation***, based on an analysis according to frequency and that focuses on one or more associated motives case by case, gathering evidence provided by informants; and ***by hierarchy of interactions***, which takes into account the main triggering factors, the role of interacting variables and predominance.

In the analysis according to frequency we studied 79 motives for suicide, organized into six categories: behavior changes; impact of loss, illnesses or disabilities; conjugal or family conflicts; lifestyle; retirement or unemployment; financial overburden. Moments before the suicide, the factor that drew most attention both among men (34.2%) and women (38.9%) was depressive, introspective, solitary and sad behavior[19-22], associated with loss, illness, disability or betrayal. There was also an important association between unhappiness and life without meaning among women (27.8%) - less among men (8.8%) - motivated by loss, disability or violence. An important factor among men (15.2%) and women (16.7%) was having to deal with intense pain[19,21,28] with no prospect of improvement.

We found motives related to lifestyle among men only, since 7.6% of them adopted risky behaviors, such as engaging in orgies and prostitution or wasting their acquired assets, which left them in a scenario of death and material decay. Retirement[19,21,28] brought by age or disability triggered depression or isolation in a few cases (8.8%), both because of reduced salaries and fall of standard of living and loss of social status. Financial overburden[21,28] (6.3%) was associated with bankrupt companies or other failing self-employed activities and ensuing difficulties individuals faced with retirement; with decrease in family income due to loss of agricultural production destroyed by climate conditions.

In the analysis ***by hierarchy of interaction between variables*** 41 multi-cause hypotheses were gathered. We identified central and triggering factors related to suicide, in a kind of "autopsy report" addressed jointly. Factors that had the highest impact, by decreasing order of magnitude, were: illnesses and disabilities, for 70% of men (28 cases) and 54.5% of women (6 cases); depression and depressive states, for 20% of men (8 cases) and 18.2% of women (2 cases); and family conflicts and conjugal crises, for 10% of men (4 cases) and 27.3% of women (3 cases).

In the group ***illnesses and disabilities*** we found the following triggering factors: (1) chronic or terminal disease with physical limitations, dependence and fear of their general state progressing to even greater vulnerability, perceived as intolerable (nine men and four women); (2) recent illness with physical agony and anxiety, associated with intense pain (four men); (3) physical or sensory disability followed by interruption of work with depressive state and retirement caused by disability (five men); (4) alcoholism with mood changes and progressive decline, weakening bonds and support (five men); (5) mental disorder associated with loss from tragic deaths, risky behavior, violence, cases of mental illness in the family (five men and two women). Contrary to a part of literature[19-21,28] that tends to address disorders separately, this study formed groups according to psychosocial patterns and physical, mental and social impacts. The abovementioned category does not exclude depressive traits; however they are not crucial here and play a supporting role among countless other variables.

Depression and depressive states as factors that triggered suicide were associated with the following motives: (1) cumulative effect of social loss, such as: bankruptcy, low profit businesses, inheritance distribution, imprisonment and difficulty readapting to life after prison, loss of crops and difficulty repaying debt and fall of standard

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of living (four men); (2) reaction to emotional loss caused by his wife dying after an illness that required intense and high cost care (one man); (3) depression with suicidal ideations, progressing to a situation of severe depression[14,25], associated with insomnia and isolation (one man and two women); (4) retirement triggering depressive states, associated with inactivity, loss of social status and feelings of uselessness (two men). In that sample, depression may be regarded in relative terms[14,19,21,25,28], on the one hand, because it appeared in only 29% of cases. Its presence may be better understood and contextualized when interacting with other factors.

Finally, a set of ***family conflicts and conjugal crises*** was among the triggering factors: (1) conjugal or family crisis involving violence (two men and two women); (2) separation-individuation in the family, strict gender roles, emotional dependence between generations and depressive reaction[19-21,24,28] (one man and one woman); (3) moral reasons, in the case of an elderly man regarded as a perfect husband and father, negatively affected by the feeling of shame when threatened with the exposure of an extramarital relationship and an alleged pregnancy of his lover.

Final Considerations

We analyzed forty-nine cases of elderly individuals aged between 60-85 years old, the stage where they have greater autonomy, and two cases of individuals older than 85, a group that is known to be more vulnerable and that requires permanent and specialized attention. Although no generalizations can be made, results reflect what epidemiological approaches describe, such as predominant suicide of men, hanging as the main method to kill oneself and cases being condensed in municipalities with less than 100,000 inhabitants.

Gender differences marked the analysis. Elderly men had higher levels of education and were married; they worked in agriculture, services or ran their own businesses; they provided for their families and were in positions of power. Elderly women had low levels of education; they were widows or separated and worked as housewives or farmers. Data show that men and women are at equal risk when they become isolated, when they shut people out and remain silent, depressed, introspective, lonely and sad. In both groups elderly individuals were affected by illnesses, disabilities and chronic pain. Men are more affected by depressive states and women by family and conjugal conflicts. Among men we found effects of alcoholism, of a troubled social life, of financial overburden, of retirement and falling income, of physical or verbal abuse. However, there are stories of unhappy women whose lives seem meaningless and affected by loss, illnesses and conjugal violence.

It is worth noting how pain and physical suffering play an important role in making elderly individuals more fragile and triggering suicide, associated with worsening physical disorders. The role of depression, interacting with other variables, should also be noted. It sometimes has a secondary role in physical and mental complications, sometimes it appears as the main motive when it is associated with loss, sudden changes in socioeconomic life, retirement, debt or existential processes of sadness and melancholy.

Some narratives made it clear how important it is to have SUS healthcare professionals supporting families. But most life stories reveal that there is no special care provided to elderly individuals at risk of suicide and their families when the fatal act occurs. Relatives become very fragile; they are discriminated against and cannot express themselves in their communities.

The diversity of Brazilian society indicates it is necessary to provide careful attention to the health of migrants and their descendants, of Indians and their descendants and to small communities that have a multitude of languages, cultural roots, ethnicities and differences in gender and traditions and whose social life is precarious.

We recommend that the healthcare sector should establish preventive strategies that aim to provide elderly individuals with quality of life and that combine social support and programs targeting specific care. For instance, many of those who died by suicide had trouble going to healthcare services due to personal limitations, either because their relatives did not own a car or simply because the care they needed was not available. The accelerated growth in the number of elderly individuals in the country, especially of groups of individuals older than 75, requires even greater attention to suicide prevention.

Collaborations

FG Cavalcante and MCS Minayo worked together in this study and writing the article.

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