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Epidemiological profile of cases of violence among the elderly in the north of Minas Gerais State, Brazil

Perfil epidemiológico dos casos de violência entre idosos no interior do Norte de Minas Gerais, Brasil

Perfil epidemiológico de los casos de violencia entre ancianos en el interior del Norte de Minas Gerais, Brasil

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This work aimed to analyze the epidemiological profile of cases of violence against the elderly in the municipality of Almenara/MG, from 2011 to 2015 and compare the characteristics of violence according to the gender. This is a cross-sectional study with data from the Social Civilian Defense Reports (Registros de Eventos de Defesa Social) provided by the Military Police of Minas Gerais State, among the elderly who performed records between 2011 and 2015. It was observed gender differences in relation to the characteristics of violence. Elderly women involved in violence were 53% less likely to live with a partner, two to fourteen times more likely to be victims of violence and four times more likely to be aggressed within the family context. By comparison, older men were twice as likely to engage in episodes resulting in injuries. Violence differs between genders, and, in order to minimize new cases and impacts on elderly's health, an intersectoral coordination is needed.
Descriptors: Aged; Violence; Gender-based violence; Public Health.

O objetivo desta pesquisa é analisar o perfil epidemiológico dos casos de violência contra o idoso no município de Almenara/MG, nos anos de 2011 a 2015 e comparar as características da violência segundo o gênero. Trata-se de estudo transversal, com dados dos Registros de Eventos de Defesa Social disponibilizados pela Polícia Militar do Estado de Minas Gerais, entre idosos que realizaram registros entre 2011 a 2015. Observou-se diferenças entre gêneros em relação às características da violência. Mulheres idosas envolvidas em violência tiveram 53% menor chance de viverem com um companheiro, duas a quatorze vezes mais chance de serem as vítimas nos episódios de violência e quatro vezes mais chance de a agressão ser perpetrada no âmbito familiar. Comparativamente, homens idosos tiveram duas vezes mais chances de envolver-se em episódios que resultaram em lesões. A violência diferencia-se entre os gêneros, e para minimizar novos casos e impactos à saúde dos idosos faz-se necessário a articulação intersetorial.
Descritores: Idoso; Violência; Violência de gênero; Saúde Pública.

El objetivo de esta investigación es analizar el perfil epidemiológico de los casos de violencia contra el anciano en el municipio de Almenara/MG, en los años de 2011 a 2015 y comparar las características de la violencia según el género. Se trata de un estudio transversal, con datos de los Registros de Eventos de Defensa Social facilitados por la Policía Militar del Estado de Minas Gerais, entre ancianos que realizaron registros entre 2011 a 2015. Se observó diferencias entre géneros en relación a las características de la violencia. Mujeres ancianas involucradas en violencia tuvieron 53% menor chance de vivir con un compañero, dos a catorce veces más chance de ser las victimas en los episodios de violencia y cuatro veces más chance de la agresión ser perpetrada en el ámbito familiar. Comparativamente, hombres ancianos tuvieron dos veces más chances de involucrarse en episodios que resultaron en lesiones. La violencia se diferencia entre los géneros, y para minimizar nuevos casos e impactos a la salud de los ancianos se hace necesario la articulación intersectorial.
Descriptores: Anciano; Violencia; Violencia de género; Salud Pública.

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INTRODUCTION

TThe increase of life expectancy associated with declines in birth and mortality rates caused a change in the age distribution of the Brazilian population. From 2020 the increasing of the elderly population will have higher intensity, from 28.3 million (13.7%) to 52 million in 2040, representing approximately a quarter of the total Brazilian population[1].

The Brazilian population aging phenomenon has become one of the important objects of health study. Among the many challenges related to aging and the elderly care needs, there is an increased vulnerability of this age group to different forms of violence, an issue that has been considered in the formulation of public policies towards this population[2].

In Brazil, the issue of violence towards the elderly started being discussed in recent decades and now has greater visibility from the enactment and regulation of the National Elderly Care Policy[4], and, subsequently, the National Plan to Combat Violence against the Elderly[5].

National and international studies show the phenomenon of violence among the elderly. A research in a health center in Recife found that 20.8% of the older adults reported having experienced at least one type of violence[6]. In a population-based survey with 729 elderly in Uberaba, Minas Gerais, it has been detected a prevalence of 20.9% of elderly under physical and/or psychological violence[7]. In Florianópolis, a research conducted with older people found prevalence of 12.4%, being the verbal violence most reported by the elderly[8]. In a recent systematic review involving 52 studies, it was found a prevalence rate of 15.7% of violence among the elderly[9].

Other sources of information confirm the increase in violence against the elderly in Brazil. According to data from the Department of Informatics of the Unified Health System (DATASUS), there was an increase in deaths from external causes among the elderly, and in 1996 there were 12,987 deaths registered, and in 2016, 31,172[10]. According to data from the Hospital Information System of the National Unified Health System (SIH-SUS), from 2009 to 2010, there were 5,309 admissions of elderly victims of domestic, sexual and other types of violence[11]. A research conducted with data from the Notifiable Diseases Information System (SINAN) covering domestic, sexual and other types of violence found that among the 3,593 reported cases of elderly, 67.7% had been victims of physical violence, of which 29.1% psychological, 27.8% negligence, 7.9% financial, 3,7% sexual abuse and 3.3% torture[12].

Although several sources of information reveal data about violence against the elderly, there is a need to increase knowledge about the issue, so that, after establishing the evidence of the problem, propose effective solutions to addressing violence against the elderly[2]. In this view, the objective of this research is to analyze the epidemiological profile of cases of violence against the elderly in the municipality of Almenara/MG, in the years 2011-2015 and compare the characteristics of violence according to the gender.

METHOD

This is a cross-sectional study that used of secondary data of the Military Police of Minas Gerais (PMMG) database. The study setting was the city of Almenara/MG, in the mesoregion of the Jequitinhonha Valley.

Data were obtained from the Social Civilian Defense Reports (REDS) for the period from January 2011 to December 2015. REDS contains data on gender; age; education; neighborhood; integrate are of public safety; color; week days; day of the month, hour and main nature of the fact; description of the medium used; degree of injury; presumed cause; street type; municipality involved and profession[13].
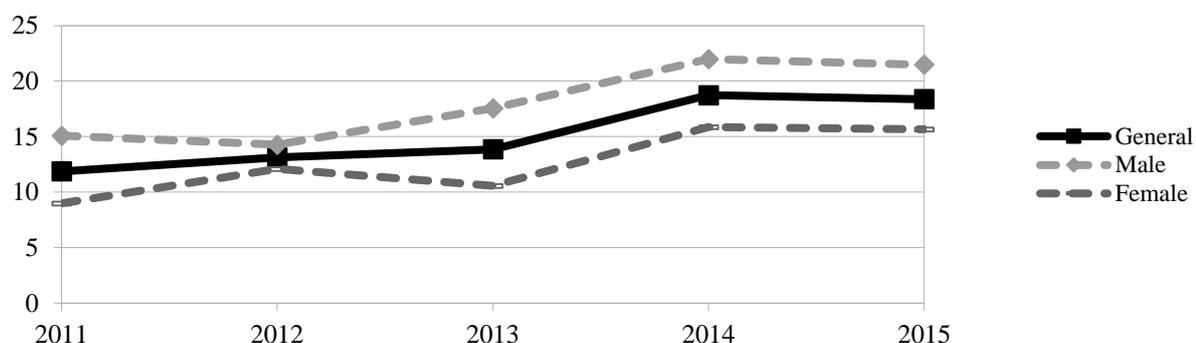
In order to access the database, the project was sent to PMMG of the municipality of Almenara/MG and, after authorization, data were collected through a script, using the variables age, age group, type of involvement, relationship between victim/ perpetrator, presumed cause, nature of violence and the degree of injury. The collection took place in

April 2017 and all people aged 60 or older were included, who have made records in the bulletin due to the occurrence of some kind of violence.

In this study, the dependent variable was the gender (male or female) and the independent variables were: age categorized (60-70, 70-79, 80 or more), marital status (married or stable union, divorced or separated, single, widowed, others), type of involvement (perpetrator, victim), relationship between victim/perpetrator (with or without kinship relation), degree of injury (no injury, mild, severe or fatal injury), presumed cause (conflict and family conflict, drugs, fights, others), nature of violence (physical aggression, sexual violence, psychological violence, negligence), and place of occurrence (neighborhood).

Data were tabulated in a spreadsheet, in *Microsoft® Excel* software, double entry. Thereafter, the consistency of databases was performed, and when necessary, the correction was implemented. In order to check the distribution of cases of violence involving older adults in the period of the study it was done the calculation of the incidence of violence per year. Data concerning the estimates of the elderly population living in the municipality, according to the year of study, were obtained at the website of the Brazilian Institute of Geography and Statistics (IBGE).

Then, data were analyzed through descriptive statistics, using absolute and relative frequency for categorical variables. The statistical analysis was done using the chi-square test, Fisher's exact test and odds ratio (OR) calculation. The tests were considered significant when p<0.05. Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS) software, version 21.

This project was submitted and approved (approval number 1,998,471) by the Ethics Committee on Human Research through Brazil Platform through the CAAE: 62106216.3.0000.5588 and meets the standards of Resolution 466/2012 of the National Health Council.

RESULTS
From 2011 to 2015, 484 police reports for incidents of violence involving people aged 60 or more in the municipality of Almenara were recorded. Chart 1 shows the temporal distribution of the records of violence.

With an annual average of 96.8 cases, data from PMMG showed increasing numbers in the records of this type of violence in the past three years, from 58 cases in 2011 to 101 cases in 2015. Of the total of attacked elderly, 273 were male and 210 female. It can be observed that in all the years studied the frequency of male older adults involved in violence was higher than in females.

Chart 1. Incidence of violence cases in the elderly, in general, and according to the gender in the 2011-2015 period. Almenara, Minas Gerais, Brazil, 2017.

Table 1 shows the characteristics of older people involved in violence and the characteristics of the episodes of violence by gender. The analysis of the variable categorized age showed that in both genders, the violence among those aged 60-69 years was more frequent, as well as higher frequency of male elderly in this age group.

The difference among the age categories was not statistically significant; for the other variables, significant differences were found between genders for the variables: marital status, type of involvement, relationship between victim/perpetrator, presumed cause and degree of injury.

Table 1. Characteristics of the elderly people involved in violence according to gender, in the period from 2011 to 2015. Almenara, Minas Gerais, Brazil, 2017.

Variable	Female		Male		p value *
	n	**%**	**n**	**%**	
Age					
60-69	126	42.1	173	57.9	
70-79	52	45.6	62	54.4	0.675
80 or over	10	37.0	17	63.0	
Marital status					
Married or Stable Union	85	36.3	149	63.7	
Divorced or separated	8	27.6	21	72.4	
Single	18	34.6	34	65.4	**0.000**
Widower	61	78.2	17	21.8	
Others	16	34.0	31	66.0	
Involvement Type					
Perpetrator	7	12.5	49	87.5	**0.000**
Victim	181	47.1	203	52.9	
Relationship between victim /perpetrator					
With kinship	115	65.3	61	34.7	**0.000**
No kinship	59	31.6	128	68.4	
Presumed cause					
conflict and Family conflict	75	58.1	54	41.9	
Drugs	28	43.8	36	56.3	**0.000**
Fights	6	17.6	28	82.4	
Others	188	42.7	252	57.3	
Nature of violence					
Physics	80	39.4	123	60.6	
Psychological	57	47.9	62	52.1	0.329
Others	51	43.2	67	56.8	
Degree of Injury					
Mild	26	29.5	62	70.5	
Severe/Fatal	3	33.3	6	66.7	**0.002**
Other injuries	8	25.8	23	74.2	
No apparent injuries	151	48.4	161	51.6	

* Chi-square test (X^2).

With regard to marital status, it was found that there was a higher frequency of married elderly or in a stable union for males, while there was predominance of divorced, widowed and single female. Comparison between groups showed a statistically significant difference (p<0.0001). The analysis of association measure, presented in Table 2, showed that older women involved in

violence were 53% less likely to live with a partner (OR: 0.47; CI 95%: 0.31 to 0.71; p=0.0003).

The descriptive analysis of the type of involvement with the incident showed, in general, that male elderly were frequently more involved in episodes of violence, both as perpetrators and victims. However, it was observed that there was significant difference

between genders (p<0.0001). When analyzing the association measure between the gender of the elderly and the involvement with violence, it was shown that older women were two to fourteen times more likely to be victims in violence incidents (OR: 6.24; CI 95%: 2.76 to 14.13, p<0.0001).

The relationship between the victim and the perpetrator was significantly different between genders (p<0.0001). Among the male elderly, there was a higher frequency of involvement of people outside the family circle. Paradoxically, in the episodes of violence involving the female gender, there was a higher proportion of individuals with family ties, with a chance four times higher that violence is perpetrated within the family context, when compared to the male gender (OR: 4.01; CI 95%: 2.64 to 6.34; p <0.0001).

Regarding the causes of the violent act, a higher frequency of fights and violence motivated by drugs in elderly male was recorded. In females, there was a higher frequency of conflict, including family conflicts. Statistical analysis showed a significant difference between genders for the variable presumed cause (p<0.0001). However, there is a significant number of incidents in which the subject of violence has not been specified, for both genders, comprising 90.9% of the cases. The characteristic of violent episodes showed a predominance of physical violence in both genders, with a higher frequency of physical violence in males and psychological violence on women. The difference of the violence nature between the genders using the Chi-square test has not been statistically significant (p=0.329), probably due to the non-classification of this information in 26.8% of the cases.

When analyzed the attacks that culminated in injury, both mild and serious and fatal injuries predominantly reached the male elderly, which is a significant difference (p=0.002). The association measure showed that males were twice as likely to engage in episodes that resulted in injuries, while older women were 57% less likely to involve in physical aggression (OR: 0.43; CI 95% 0.28 to 0.67; p = 0.0002).

Table 2. Association between the characteristics of violence and the gender of the elderly from 2011 to 2015. Almenara, Minas Gerais, Brazil, 2017.

Variable	Female	Male	* OR (CI 95%) [a]	p value
	n (%)	n (%)		
Marital status				
With a partner	85 (49.4)	149 (67.4)	0.47 (0.31 to 0.71)	**0.0003**
No partner	87 (50.6)	72 (32.6)		
Type of involvement				
Victim	181 (96.3)	203 (80.6)	6.24 (2.76 to 14.13)	**<0.0001**
Perpetrator	7 (3.7)	49 (19.4)		
victim/perpetrator relationship				
With kinship	115 (66.1)	61 (32.3)	4.01 (2.64 to 6.34)	**<0.0001**
No kinship	59 (33.9)	128 (67.7)		
Nature of violence				
Physics	80 (58.4)	123 (66.5)	0.71 (0.45 to 1.12)	0.14
Psychological	57 (41.6)	62 (33.5)		
Apparent Injury				
Present	37 (19.7)	91 (36.1)	0.43 (.28-.67)	**0.0002**
Absent	151 (80.3)	161 (63.9)		

* OR: odds ratio; the 95% CI: 95% confidence interval.

Figure 1 shows the spatial distribution of violent incidents involving older people in Almenara municipality, in the period from 2011 to 2015. The descriptive analysis of the spatial distribution of elderly violence according to the gender showed that, despite a higher frequency of violence against male individuals, these episodes are more concentrated and occur, mostly, in more centralized districts of the municipality. Violence involving older women, however, presents wide geographical distribution and

is most commonly found in suburbs, and, especially, in the countryside. In urban areas, 56.2% (n=189) of older people involved in violence were male and 47.1% (n=169) were female. By comparison, among episodes of violence against the elderly registered in the countryside, 80% (n=4) were carried out against the female. Statistical analysis showed that the occurrence of violence against the elderly in urban and rural areas differ significantly between the genders (p=0.003). This heterogeneous distribution of episodes between the genders raises aspects of violence in the elderly that require further investigation.

Figure 1. Map of violence involving elderly, in the period from 2011 to 2015, according to the location record. Almenara, Minas Gerais, Brazil, 2017.

Source: PMMG.

DISCUSSION

This study showed that in Almenara, municipality of Jequitinhonha Valley, Minas Gerais, the violence against the elderly has increased in recent years and its distribution and characteristics occur differently between the genders.

Population aging is a global phenomenon, with greater expressiveness in developing countries[14] and greater concentration of females, resulting from a higher male mortality[15]. In Almenara, the population aged ≥60 years turned from 4,887 in 2011 to 5,500 in 2015[16]. This phenomenon has also generated repercussions in the family and society.

The demographic transition and changes in family structure over recent decades have revealed changes in the pattern of interdependence among the generations of the same family. In addition, family and community support for the elderly has changed before the social and economic changes[14]. The aging scenario of the Brazilian population, therefore, brings several challenges for health services and protection of the elderly.

The aging process takes place in a context of functional decline, emergence of disabilities, presence of chronic diseases[17], social isolation, harm to physical and/or mental health, reduced income and loss of relationship networks[18]. All of these factors contribute to the vulnerability of the elderly person, which, consequently, increases the risk for violence occurrence.

Annually, it is estimated that one in six elderly are victims of violence. To the extent that the overall prevalence of violence against the elderly is 15.7%, the growth of the elderly population will culminate in a significant increase of victims, expected to 330 million victims in 2050[9]. The prevalence of violence may vary from 3.2 to 27.5%; however, the numbers of violence are still far from real, because in many situations the elderly are reluctant or unable to report the abuse[19].

For the temporal series considered (2011 to 2015), there was an increase in reports of violence against the elderly. This finding may be related to changes in the face

of public policies to assist the elderly; among them, the Elderly Statute stands out, which strengthens the issues related to maltreatments[20].

The findings of this study showed significant differences between the marital status of elderly men and women involved in violence. While most elderly men were married or in a stable relationship, elderly women had no companion. A survey conducted in Brasilia found that the majority of elderly victims of violence were married, followed by widowed and single ones[20]. In turn, other researches found that elderly without partners had a higher percentage of violence[6,21], especially the female elderly[12]. It is possible that the differences found among the municipalities may be related to the gender of the elderly, which highlights the need for more studies with analyzes stratified by gender.

Violence against the elderly is multifactorial and results from the interaction of individual determinants of the victim and the aggressor, shaped by social conditions and social structure[22]. An important finding of this study is that older women are more victims of violence, while men are more often perpetrators of violent acts. These results reinforce gender issues, which lists the duties historically constructed and given to man and woman, marked by asymmetry and hierarchy in the relationship between them and daily produced[23]. Being a victim of violence can generate feelings of threat by the inability to defend oneself in order to ensure ones' security[20]. There is evidence that older women victims of violence feel ignored, misunderstood and lack credibility when presenting complaint of violence episode, mainly when the perpetrator is an intimate partner[24].

Relations among those involved in violence, as well as the presumed cause, also showed differences between genders. The fact that women are the biggest victims of people with family ties may be linked to power relations developed within the family context and the intergenerational conflicts[25]. Family conflicts, including family disharmony and conflict relationships are risk factors for the

violence against the elderly[26]; in addition, gender and sexuality issues may also be important risk factors[27].

In women, the risk of being a victim of violence in old age is influenced by the history of aggression in other stages of life, be dependent financially, be divorced or separated, have a low level of education and, above all, lack of community support and family and social support networks[24]. In contrast, most men have involved in episodes of violence with people outside the family context and usually from fights. This finding meets the results of a survey that, from data obtained from the SINAN, showed that men engage more in violence outside home, being practiced by attackers with no family bond[12].

In this study, it was found that women are involved less often in violence, which resulted in aggression and apparent injuries, while men were involved in episodes that resulted in minor to serious and life threatening injuries. This difference may result from the kind of violence to which the elderly were submitted, because there was a significantly higher frequency of psychological violence among older women and physical violence among the male elderly. Studies show that older women are more frequent victims of psychological violence and negligence, a result similar to this study[12,27]. Violence is responsible for causing not only apparent injuries, but irreversible health consequences, such as the general state of poor health, stomach problems, anxiety, stress, sleep disorders[28].

This research reinforces the importance of the activities developed by the Health Units, being the role of the professionals decisive in the identification of victims of violence, promotion of preventive actions, diagnostic and delivery of care needed for the victims[25].

Evidence from studies that address this issue have highlighted the need for more efforts aimed at identifying cases of violence from the health professionals, particularly with regard to gender violence in this age group that is still a little discussed subject[24].

The information is of paramount importance to the design of the context of violence; this way, the development of

protocols that address data for future work are critical to help professionals who record the events and other researches in Geriatrics and Gerontology areas[29].

Despite the development related to the advances in defense of the elderly rights[29] there is a need for preventive actions, as well as the linkage between security and health sectors, in order to publicize the issue, its consequences and support services.

Gender violence in third age undergoes an invisibilization phenomenon in which both discrimination against age and sexism contribute to increased vulnerability in the female gender[24], which makes it necessary to consider the interface of violence against the elderly person and the gender violence in coping actions in order to promote an integrated approach among the social and health services.

CONCLUSION

The results of the study confirm gender-based violence, with the elderly women at greater risk factor in relation to men. In addition, the dialogue between health agencies and institutions is essential to the security guarantee and resolution of social problems for the elderly.

One emphasizes the importance of the results; however, the study has some limitations. The use of secondary data does not reflect the true picture of the violence against the elderly, in the municipality, since it depends on the existence of the recording of the violence by the victim or his/her guardian. The elderly vulnerability associated with emotional, financial dependence, among others, contributes to the underreporting of cases, especially when violence is perpetrated by caregivers themselves.

It is therefore suggested studies with larger amplitude and methodological cutouts. Nevertheless, for the municipality, the research can serve as a sensor for the reality of violence against the elderly and the intervention against this reality.

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CONTRIBUTIONS
Mariana Mapelli de Paiva was responsible for the design and orientation of the study and participated in the data analysis and writing. **Eyleen Nabyla Alvarenga Niitsuma** and **Janaina Santos Nascimento** contributed to the data analysis and writing. **Daiane Prates Prates** participated in the writing.