



CHARACTERIZATION OF TRAUMA IN ELDERLY ASSISTED IN A MOBILE EMERGENCY CARE SERVICE

CARACTERIZAÇÃO DO TRAUMA EM IDOSOS ATENDIDOS EM SERVIÇO DE ATENDIMENTO MÓVEL DE URGÊNCIA

CARACTERIZACIÓN DEL TRAUMA EN ANCIANOS ATENDIDOS EN SERVICIO DE ATENCIÓN MÓVIL DE URGENCIA

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Trauma in the elderly is a common event, requiring trained professionals in this area. This study aimed at characterizing the occurrence of trauma in the elderly assisted at the Mobile Emergency Care Service, João Pessoa Region - Paraíba, Brazil. This is a documental, retrospective study, conducted from April to December 2012, through the review of 180 medical records from aged trauma victims. The data analysis was conducted by descriptive and exploratory statistics, using Pearson's chi-square test. Concerning the results, falls represented 74.4% of the traumas, 84.4% of the assistances occurred in the capital and 40.6% of the elderly were sent to the reference hospital for traumas. As consequences of traumas, the most commons items were: pain (32.1%) and suspected fracture (20.6%). One concludes that it is important to plan interventions for trauma prevention with the elderly.

Descriptors: Elderly; Wounds and Injuries; External Causes; Accidental Falls.

Trauma em idosos é um evento comum, tornando necessária a existência de profissionais capacitados nesta área. Objetivou-se caracterizar as ocorrências de trauma em idosos atendidos no Serviço de Atendimento Móvel de Urgência, Regional João Pessoa – Paraíba, Brasil. Estudo documental, retrospectivo, realizado de abril a dezembro de 2012, pela revisão de 180 fichas de idosos vítimas de trauma. A análise dos dados foi efetivada pela estatística descritiva e exploratória, utilizando o teste de Qui-quadrado de *Person*. Quanto aos resultados, as quedas representaram 74,4% dos traumas, 84,4% dos atendimentos ocorreram na própria capital e 40,6% dos idosos foram encaminhados para o hospital de referência em traumatologia. Como consequências do trauma os itens mais encontrados foram: dor (32,1%) e suspeita de fratura (20,6%). Conclui-se que é importante o planejamento de intervenções para prevenção do trauma em idosos.

Descritores: Idoso; Ferimentos e Lesões; Causas Externas; Acidentes por Quedas.

Trauma en ancianos es un evento común, lo que exige profesionales capacitados en esta área. El objetivo del estudio fue caracterizar la ocurrencia de traumas en ancianos atendidos en servicio de atención móvil de urgencia, Regional João Pessoa - Paraíba, Brasil. Estudio documental, retrospectivo, llevado a cabo entre abril y diciembre de 2012, por la revisión de 180 fichas de ancianos víctimas de traumas. Los datos se analizaron mediante estadística descriptiva y exploratoria, utilizando la Persona chi-cuadrado. Cuanto a los resultados, las caídas representaron 74,4% de las lesiones, 84,4% de los atendimientos se produjeron en capital y 40,6% de los ancianos fueron encaminados al hospital de referencia para trauma. Como consecuencias del trauma, los ítems más frecuentes fueron: dolor (32,1%) y sospecha de fractura (20,6%). Es importante planificar las intervenciones para la prevención de traumas en ancianos.

Descritores: Ancianos; Heridas y Traumatismos; Causas Externas; Accidentes por Caídas.

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INTRODUCTION

The profile of the Brazilian population profile has been decreasing in the number of young people and increasing in the number of aged people, due to the increase of life expectancy and decrease in the mortality and birth rates. In addition to the significant growth in the number of aged people and the search for a more active lifestyle, the number of traumas has been increasing in those people, and they are more and more exposed to the risk of accidents, for example, traumas. This phenomenon is described as injuries that come from force, of accidental nature, self imposed or from a violent act that affects one or more systems and requires immediate care⁽¹⁻³⁾.

Among the factors involving trauma in the elderly, studies show a higher proportion of male victims, regardless of their age. This situation occurs because men move with greater frequency in the urban areas than women. Another explanation is that men are more inserted in the job market⁽⁴⁾. It is highlighted that aging is associated with increased risk of the occurrence of the frailty syndrome which is another predisposing factor to trauma. Regarding the conceptual aspects of fragility, it is understood as a clinical syndrome in which there is a reduction in the physiological reserves and in the body's homeostatic ability to resist to stressful events⁽⁵⁾.

Moreover, aging is a continuous process that is characterized by anatomical and functional changes, in a gradual way, making the body more susceptible to intrinsic and extrinsic aggressions. Among the intrinsic factors, the changes in the nervous, cardiovascular, sensory and mainly musculoskeletal systems are highlighted. These changes are especially evident due to difficulties in seeing, hearing, smelling, having balance, in the motor coordination and in the reaction time. Alcohol consumption, polypharmacy and comorbidities also influence these changes. As extrinsic factors that predispose them to traumas, one emphasizes the increase in the number of elderly in urban centers,

structural problems in the private and public spaces, and even the traffic dynamics, which favors motorized vehicles instead of pedestrians^(1,3-4,6).

The most frequent trauma events in the elderly are falls and motor vehicle accidents (running over and crashes) followed by burns and domestic violence⁽²⁾. Thus, accidents caused by external causes in the elderly deserve attention, mainly because they are preventable and constitute the fifth leading cause of mortality in individuals older than 75 years old. Besides that, the elderly show pain and suspected fracture, more frequently as a result of the trauma. It is also an aggravating factor in this reality, the fact that the elderly have a greater possibility of recurrence of the trauma due to the occurrence of comorbidities that, in general, affect their functionality⁽³⁾.

Recognizing the importance of understanding the issues that permeate the occurrence of trauma in the elderly, the following hypotheses were raised: accidents due to external causes are more prevalent in aged men; the most common mechanisms of trauma in the elderly are falls and motor vehicle accidents; the most prevalent consequences of trauma in the elderly are pain and suspected fracture.

Based on those reflections, the relevance of this study is justified by the need to increase knowledge regarding trauma in the elderly, because when they are faced with this situation, they reduce their capacity of recovery, high rates of hospitalization, morbidity and mortality, besides causing high financial and social costs, requiring a permanent home caregiver⁽⁷⁻⁸⁾.

The results of this study are expected to encourage new thinking about the need for greater attention by the services to the elderly, in order to have trained professionals in this area, recognizing the specific characteristics of these people as well as the risks that surround them, so that care can have an effective and efficient result. In this context, this study

aimed at characterizing the occurrence of trauma in the elderly assisted at the Mobile Emergency Care Service (SAMU), João Pessoa Region - PB, Brazil.

METHOD

Retrospective study, developed through the review of records from SAMU's database, João Pessoa region, Paraíba, Brazil. The sample was randomly selected by means of simple sampling. For its calculation the following formula was considered: $no. = Z^2 PQ/d^2$, being $no.$ = minimum sample size; Z = reduced variable; P = probability of finding the studied phenomenon; $Q = 1-P$; d = desired precision. Adopting $p = 50\%$, and parameter of sampling error of 5%, and confidence level of 1%. According to the data of the Department of Medical Records and Statistics (SAME) from SAMU - João Pessoa region, from January to December 2011, 27,904 assistance forms were generated. Out of these, 3.7% were for trauma in the elderly.

According to the calculations, the sample was composed of 95 medical records, however, the final sample consisted of 180 medical records of elderly trauma victims chosen randomly. The medical records containing data were included, such as: personal, clinical and type of assistance provided by the health team, which occurred in the period from January to December 2011. The ones containing large numbers of underreported information were excluded.

Study conducted in the period from April to December 2012, with data collection occurring in September of that year, using a structured instrument that included questions that characterized the trauma in the elderly, such as gender, age, alcohol use, origin, destination, type of trauma and injuries found.

Data analysis was carried out by means of descriptive and inferential statistics through a chi-squared test, adopting a significance level of 5%. For this, the computer system Statistical Package for the Social Sciences - SPSS version 20.0 was used.

The ethical aspects that regulate research involving human subjects arranged in the Resolution 196/96 of the National Ministry of Health/Brazil were observed⁽⁹⁾. The study was approved by the Ethics Committee in Research of the Center for Health Sciences, Universidade Federal da Paraíba, according to Protocol number 0213/12.

RESULTS

Among the 180 elderly trauma victims, 93 (51.7%) were male and 87 (48.3%) female. Concerning age group, 38 (21.1%) were between 60 and 64 years old, 42 (23.3%) were between 65 and 69 years old, 33 (18.3%) between 70 and 74 years old, 22 (12.2 %) between 75 and 79 years old and 45 (25%) were 80 years old or older. A statistically significant relationship between the variables trauma, alcohol breath and sex ($p = 0.001$) was found.

Table 1 - Characterization of trauma evidenced by the elderly assisted by SAMU João Pessoa, PB, Brazil, 2012 (no. = 180)

Variable/Category	n	%	CI 95%
Type of trauma			
Falls	134	74.4	61.7 to 88.4
Traffic accident	37	20.5	11.1 to 27.3
Physical aggression	5	2.8	0.6 to 5.6
Burn	2	1.1	0 to 2.8
Poisoning	1	0.6	0 to 1.7
House collapse	1	0.6	0 to 1.7
Origin			
Capital	152	84.5	79.4 to 89.4
Nearby Cities	20	11.1	6.7 to 16.1
Federal highways	8	4.4	1.7 to 7.2
Trauma hospital	118	65.5	50.5 to 80.5
On-site assistance	31	17.2	12.2 to 22.8
Destination			
Other hospitals	29	16.2	5.6 to 29.5
Death on the spot	2	1.1	0 to 2.8
None	14	7.7	3.9 to 11.7
The number of injuries			
Up to 3	164	91.1	87.2 to 95
4 or more	2	1.2	0 to 1.7

The predominant type of trauma in the elderly population studied in 2011 were falls accounting for 134 (74.4%) of the cases, followed by traffic accidents with

37 (20.5%) cases and physical aggression with 5 (2, 8%) cases. Besides that, 152 (84.4%) medical appointments occurred in the capital, and 73 (40.6%) were sent to the reference hospital for trauma, showing 164 (91.1%) up to three injuries.

Table 2 presents the data relating to the consequences of trauma.

Table 2 - Distribution of the consequences of trauma in elderly patients assisted by SAMU. João Pessoa, PB, Brazil, 2012 (no = 180)

Variable*	n	%	CI 95%
Pain	89	32.1	26.7 to 37.9
Suspected fracture	57	20.6	15.9 to 25.6
Cut	49	17.7	13 to 22.4
Excoriation	37	13.4	9.4 to 17.3
Edema	13	4.7	2.5 to 7.6
Hematoma	12	4.3	2.2 to 6.9
Stab	4	1.4	0.4 to 2.9
Dislocation	4	1.4	0.4 to 2.9
Complete fracture	3	1.1	0 to 1.8
Traumatic brain injury	3	1.1	0 to 1.8
Fracture	2	0.7	0.4 to 2.9
Ecchymosis	2	0.7	0.4 to 2.9
Laceration	1	0.4	0 to 1.1

* Possibility of more than one answer per procedure

DISCUSSION

Among the subjects there was the prevalence of the male gender. This result shows accordance with a study conducted in Londrina involving 495 assistance forms of trauma in the elderly, where 61% of the sample were male, showing that men tend to be more exposed to trauma, for being more active, moving more frequently in the urban perimeter and being more inserted in the labor market⁽⁴⁾.

The elderly patients were 80 years old or older, which is similar to the findings in a study conducted in Londrina with 108 elderly trauma victims assisted in an emergency care unit, in which 36 (33%) were 80 years old or older⁽¹⁰⁾. It is important to highlight that the older the elderly are, the greater their weakness and susceptibility to external events is.

The falls are the most frequent events, followed by traffic accidents and physical aggression, which corroborates the findings of this study^(4,11). Falls are the most common and disabling events in the elderly, causing large numbers of hospitalization and mortality, and they can be defined as unintentional events that lead a person inadvertently to fall to the ground at the same level or to a lower level⁽⁸⁾, being influenced by several factors according to the culture of the elderly and their living conditions, besides being associated with biopsychosocial problems⁽¹²⁾.

The causes of falls are diverse and they can be divided into intrinsic and extrinsic factors. Among the former there are the changes that the elderly face, such as pathological conditions and adverse effects of medications, or concomitant use of drugs. It is important to highlight that, with increasing age the likelihood of falling increases. Among the extrinsic factors, the environmental hazards and inadequate clothing and footwear are highlighted⁽¹³⁾.

Regarding the use of alcohol, a statistically positive relationship between the variables alcohol breath and sex was found. The elderly who had alcohol breath were mostly male. This happens because culturally men drink more alcohol than women in any stage of life. According to a study about evaluation of the elderly who had fractures, alcohol consumption causes changes in balance, behavior and gait of the elderly, which cause a higher number of falls, collisions, trampling and aggressions⁽⁶⁾.

The use of alcohol is one of the main factors that contribute to high rates of morbidity due to external causes. There are several reasons that lead to alcohol use, among them the easy access to the product, the low cost and promotion of consumption by means of advertising. Another important factor is that alcohol drinking is socially and legally accepted⁽¹⁴⁾.

Most injuries occurred in their own town, followed by nearby towns and federal highways. The larger towns

are reference to the surrounding towns, which causes overcrowding in hospitals and higher expenses for public health.

Regarding the destination of the elderly after trauma, the study conducted in the city of Londrina in 2005 found similar results as this study, in which the elderly were sent to hospitals that are reference services for trauma treatment⁽⁴⁾. These results suggest that this problem, in most cases, is not solved only by emergency care, for being very vulnerable people in which one must investigate the possible existence of comorbidities that are not detected in the pre-hospital level, due to a lack of diagnostic resources.

Out of the elderly who have suffered trauma, there was a prevalence of trauma with up to three injuries, especially pain, suspected fracture and cuts. Any injury in the elderly must be seen as serious, since aging is characterized by physiological and functional decline that makes the elderly more fragile and with less chances of recovery.

The fracture is the most common consequence of trauma in the elderly, contributing to high rates of prolonged hospitalization^(2,10,15). Furthermore, especially hip fractures is causing a lot of thromboembolism that can generate serious injuries for the elderly and even their death⁽²⁾.

CONCLUSION

The results showed that the majority of the elderly patients were male and the most frequent events were falls, followed by traffic accidents and physical aggression, with the consequences of pain and suspected fracture, so the three hypotheses mentioned in the introduction of this study were confirmed.

The results presented could not be expanded to other information, such as the clinical parameters of the elderly assisted, due to limitations, such as the high rate of underreporting found in the records searched. To

avoid this obstacle, it is necessary to raise awareness of the professionals regarding the importance of correct completion of the assistance forms of elderly trauma victims in order to support investigations and decision taking in the health practice. These results can serve as a basis for further studies and reflections about the theme, besides providing support for planning, implementation and evaluation of actions and public health policies aimed at preventing these events.

COLLABORATIONS

Oliveira FMRL, Fernandes MGM, Barbosa KTF, Pereira MA, Santos KFO and Nunes TB contributed to the creation, analysis, data interpretation, writing of the article and final approval of the version to be published.

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